DCR-PC100/PC100E

RMT-811

SERVICE MANUAL

Ver 1.2 2001. 12

US Model
Canadian Model
Korea Model
DCR-PC100
AEP Model
UK Model
Australian Model
Chinese Model
DCR-PC100E
E Model
Hong Kong Model
Tourist Model
DCR-PC100/PC100E

D300 MECHANISM

Self Diagnosis Supported model

Digital Handycam

InfoLITHIUM™ M SERIES

Cassette Memory

MEMORY STICK

Photo : DCR-PC100

On the VC-227 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-227 board.

Therefore, schematic diagram, printed wiring board and electriacal parts list of the VC-227 board are not shown.

The following pages are not shown.

Schematic diagram .... Pages 4-13 to 4-42
Printed wiring board .... Pages 4-43 to 4-46
Electrical parts list .... Pages 6-18 to 6-25

For MECHANISM ADJUSTMENTS, refer to the "DV MECHANICAL ADJUSTMENT MANUAL Ⅰ D MECHANISM" (original: 9-973-815-11, supplement: 9-973-815-81) and "DV MECHANICAL ADJUSTMENT MANUAL Ⅲ D200 MECHANISM" (original: 9-973-981-11).

DCR-PC100 : NTSC model
DCR-PC100E : PAL model

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning system
Audio recording system
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)
Video signal
PC100: NTSC color, EIA standards
PC100E:
PAL colour, CCIR standards
Usable cassette
Mini DV cassette with the MiniDV mark printed
Tape speed
SP: Approx. 18.81 mm/s
LP: Approx. 12.56 mm/s
Recording/playback time (using cassette DVM60)
SP: 1 hour
LP: 1.5 hours
Fastforward/rewind time (using cassette DVM60)
Approx. 1 min. and 50 seconds (using the AC power adaptor)
Approx. 2 min. and 30 seconds (using the battery pack)
Viewfinder
Electric viewfinder (colour)
Image device
1/4 inch CCD (Charge Coupled Device)
Approx. 1,070,000 pixels
(Effective: Moving image: Approx. 690,000 pixels, Still image: Approx. 1,000,000 pixels)
Lens
Carl Zeiss
Combined power zoom lens
Filter diameter 37 mm. (1 1/2 in.)
PC100/PC100E: EXCEPT AEP, UK:
10× (Optical), 120× (Digital)
PC100E: AEP, UK:
10× (Optical), 40× (Digital)
Focal length
4.2 - 42 mm (3/16 - 1 11/16 in.)
When converted to a 35 mm still camera
Camera mode: 48 - 480 mm (1 15/16 - 19 in.)
Memory mode: 40 - 400 mm (1 5/8 - 15 3/4 in.)
Colour temperature
Auto, HOLD (Hold), ☼Indoor (3200K), ✳ Outdoor (5800K)
Minimum illumination
7 lux (F 1.8)
0 lux (in the NightShot mode)*
* Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/Output connectors

S video input/output
Input/output auto switch
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 ohms, unbalanced
Chrominance signal:
0.286 Vp-p (PC100),
0.3 Vp-p (PC100E)
75 ohms, unbalanced
Audio/Video input/output
Input/output auto switch
AV MINI JACK, 1 Vp-p, 75 ohms, unbalanced, sync negative
327 mV, (at output impedance more than 47 kilohms)
Output impedance with less than 2.2 kilohms/Stereo minijack (ø 3.5mm)
Input impedance more than 47 kilohms
i DV input/output
4-pin connector
Headphones jack
Stereo minijack (ø 3.5 mm)
LANC control jack
Stereo mini-minijack (ø 2.5 mm)
MIC jack
Minijack, 0.388 mV low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kilohms (ø 3.5 mm)
Stereo type

LCD screen

Picture
2.5 inches measured diagonally
50 × 37 mm (2 × 1 1/2 in.)
Total dot number
200,640 (880 × 228)

General

Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)

— Continued on next page —

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

MICROFILM

SONY®

DV MECHANICAL ADJUSTMENT MANUAL III

Difference Manual

D200 MECHANISM

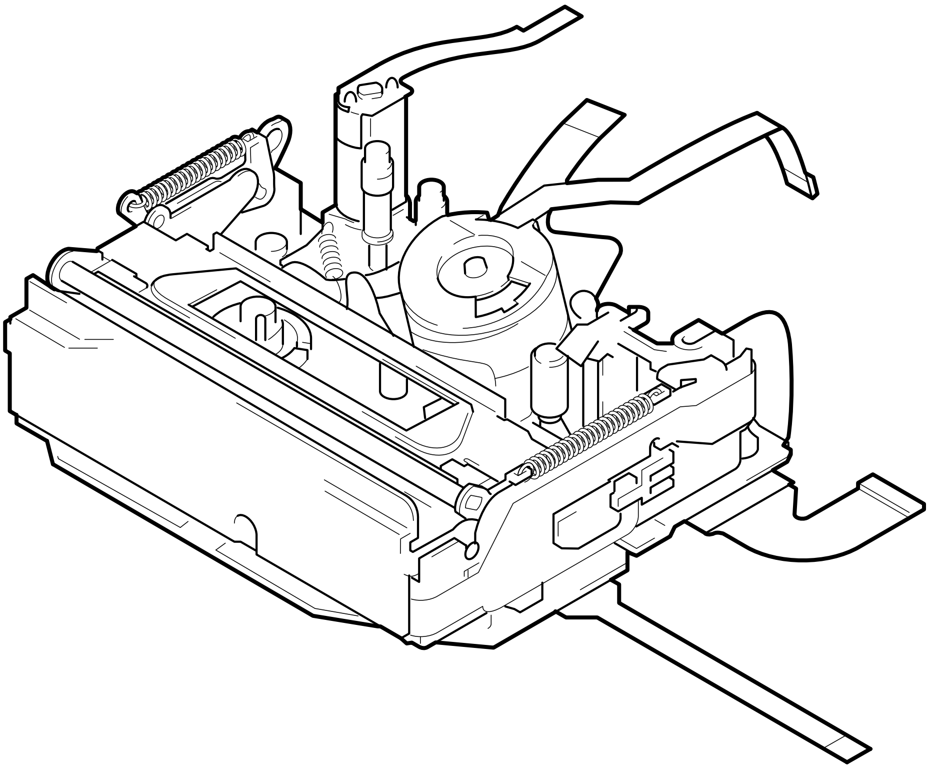
Mini DV Digital Video Cassette

Only differences compared with the “DV MECHANICAL ADJUSTMENT MANUAL I (D MECHANISM)” are mentioned in this service manual. Use with service manual (Original : 9-973-815-11, CORRECTION-1 : 9-973-815-92) for repair.

MAIN DIFFERENCES
1. **Cassette compartment's form**
2. **Attachment of LM motor**
3. **Change of the EJ arm's form**

Note : The page No. ( ) stated on top of each title shows you the page No. in the previous issued original service manual, “CORRECTION-1”or “DV MECHANICAL ADJUSTMENT MANUAL I” .

Example : (Original : Page 6)
(Correction-1 : Page 2)
2-4. SERVICE JIGS LIST



Digital MECHANISM

SONY®

TABLE OF CONTENTS

Note : Regarding to sections not mentioned in followings, refer to the original manual (D mechanism). Some reference pages among them are to be referred to this “Difference Manual”.

Section *Title* *Page*

1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND MAINTENANCE

1-1. Cassette Compartment Assembly 3

2. PERIODIC CHECK AND MAINTENANCE

2-4. Service Jigs List 4
2-5. Use of Mode Selector II 6
  2-5-1. Outline 6

3. MECHANISM SECTION CHECKS, ADJUSTMENTS AND REPRACEMENTS

3-1. Drum Assembly
(Motor FPC Assembly, Elastic Connectors) 7
3-8. LM Motor Assembly 8
3-13. T Hard Brake, L Brake, S Brake Arm, S Hard
and CC Switch Cover 9
3-17. FWD BackTension Adjustment 10
3-18. Reel Table Torque Check 10
3-22. LS Chassis Block Assembly, Gooseneck Assembly,
Relay Gear, Cam Slider, Comulsion Arm Assembly 11
3-25. Mode Cam Assembly, FP-585 Flexible Board 12
3-26. LS Arm Assembly, Eject Lever,
Cam (S) Spacer and Cam (S) Assembly 13

5. EXPLODED VIEW

5-1. Cassette Compartment and Drum assembly 14
5-2. LS Chassis Assembly 15
5-3. Mechanism Chassis Assembly (1) 16
5-4. Mechanism Chassis Assembly (2) 17

6. PRINTED WIRING BOARD AND
SCHEMATIC DIAGRAM 18

7. ELECTRICAL PARTS LIST 19

2-1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND MAINTENANCE

PREPARATION

- For removal of the cabinet and boards, refer to “Disassembly” in each service manual.
- When the adjustment and maintenance for the mechanical section are performed, select the condition of mechanical deck using mode selector II for easy use to operate. Refer to “2-5. How to handle the mode selector II” to select the following each ☐ mode.

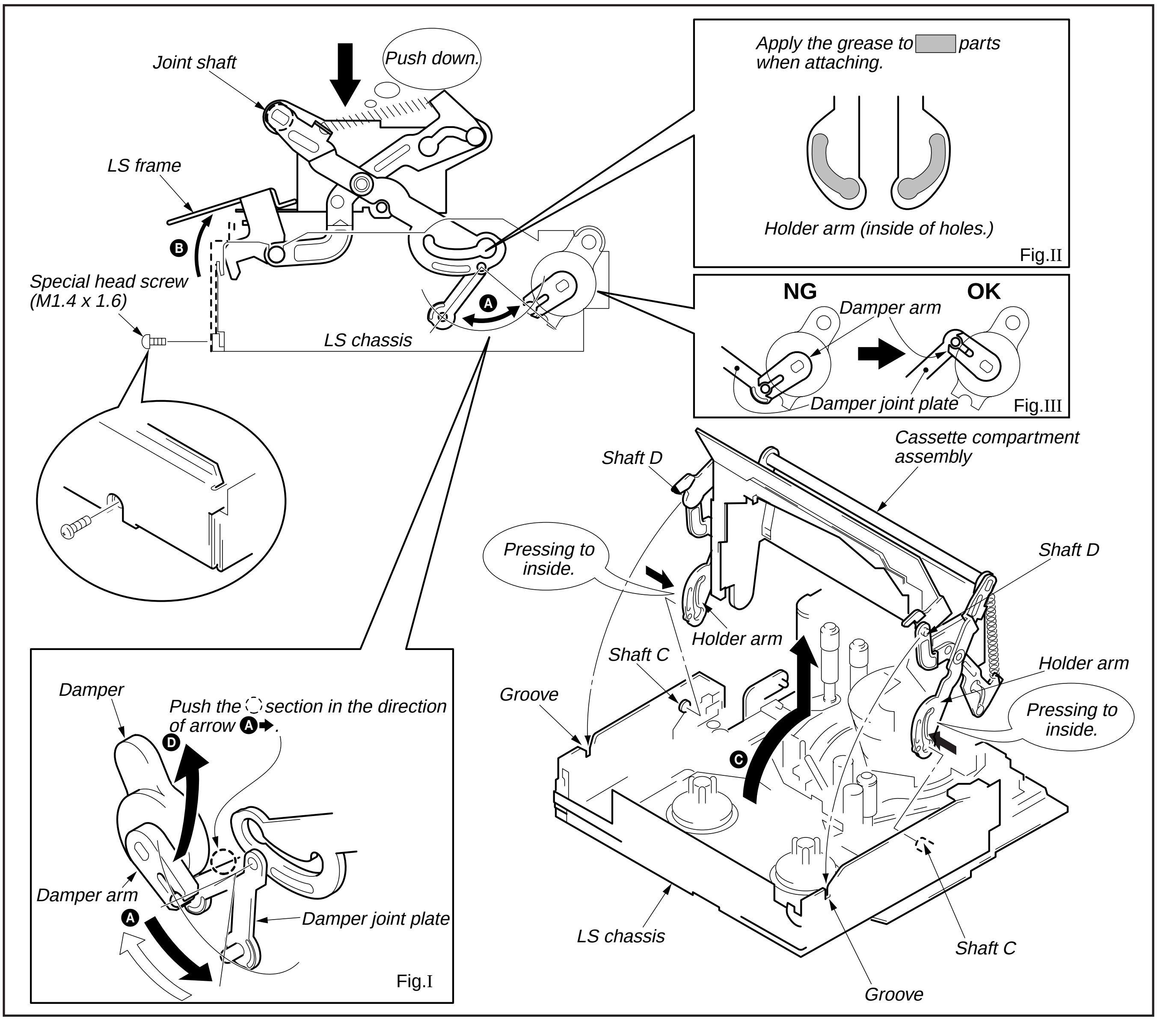
1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removing

1) Set the USE—EJ mode.
2) Remove the damper joint plate from the damper. (See figure. I)
3) Remove the screw.
4) Push down the joint shaft, and move the LS frame to the direction of arrow Ⓑ.
5) Lift the cassette compartment assembly to the direction of arrow Ⓒ, then remove pressing the left and right holder arms to inside.

2. Attaching

1) Set the USE—EJ mode.
2) Apply the grease (two positions, 1.5 mm dia.) to the holder arm, then attach it to the shaft C pressing the holder arms to inside.
   Grease: Floil Grease (SG-941)(See figure.II)
3) Attach the damper joint plate to the damper in the direction of arrowⒶ⇨.
4) Push up the damper arm in the direction of arrow Ⓓ.
5) Pull down the cassette compartment assembly to front, attach the shaft D to a groove of LS chassis, then pull down the LS frame to front.
6) Attach the screw.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)


Joint shaft
Push down.
LS frame
Ⓑ
Special head screw (M1.4 x 1.6)
Ⓐ
LS chassis
Apply the grease to ▨ parts when attaching.
Holder arm (inside of holes.)
Fig.II
NG
OK
Damper arm
Damper joint plate
Fig.III
Damper
Push the ◌ section in the direction of arrow Ⓐ➡.
Ⓓ
Damper arm
Ⓐ
Damper joint plate
Fig.I
Shaft D
Cassette compartment assembly
Pressing to inside.
Shaft D
Holder arm
Shaft C
Groove
Ⓒ
Holder arm
Pressing to inside.
LS chassis
Shaft C
Groove

(Original : Page 6)
(Correction-1 : Page 2)

2-4. SERVICE JIGS LIST

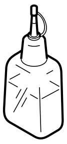
Ref. No.	Name	Part No.	Fixtur No.	Usage, Others Application, etc
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Wiping cloth	7-741-900-53		
J-3	Super fine applicator (Made by NIPPON APPLICATOR (P752D))			
J-4	Mirror (Small oval type)	J-6080-840-A	GD-2038	Tape path
J-5	Tracking tape (XH2-1) (NTSC/PAL)	8-967-997-01		Tape path
J-6	Mini DV torque cassette	J-6082-360-A		For FWD torque, RVS torque and FWD back tension.
J-7	Cassette standerd plate	J-6082-330-A		
J-8	Reel standard plate	J-6082-331-A		
J-9	Dummy drum (D mechnism)	J-6082-332-A		
J-10	TG1 preset base (D mechanism)	J-6082-333-A		
J-11	TG5 preset base (D mechanism)	J-6082-334-A		
J-12	Washer fixture ø0.8	J-6082-233-A		
J-13	Torque driver	J-9049-330-A		
J-14	Screwdriver for tape path	J-6082-026-A		For adjusting tape guide
J-15	Adjusting remote commander (RM-95 remodeled partly) Note1	J-6082-053-B		
J-16	Mode selector II	J-6082-282-A		For all operating
J-17	Mode selector II change connctor board	J-6082-335-A		
J-18	Screw lock G (1401B)	7-432-114-11		For adjusting FWD position and FWD back tension
J-19	FWD/BACK Tension adjustment driver	J-6082-187-A		

Other equipment used
- Oscilloscope

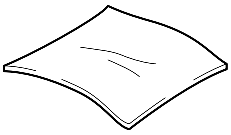
Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched.
In this case, replase with the new micro processor (8-759-148-35).

(Original : Page 7)
(Correction-1 : Page 2)

J-1



J-2



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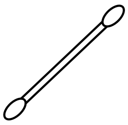

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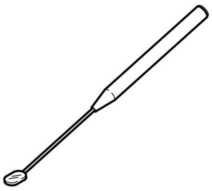

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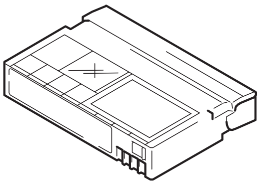

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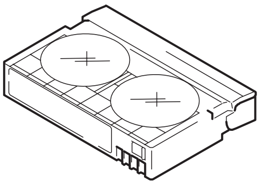

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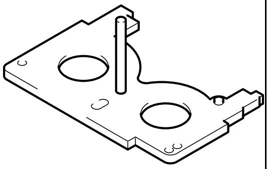
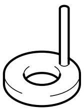
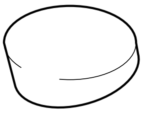


J-8



J-9



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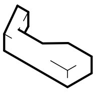
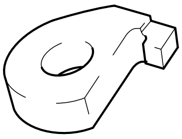


J-11



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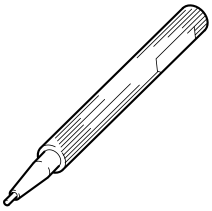

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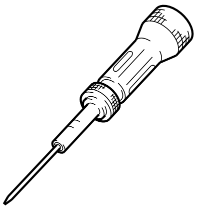
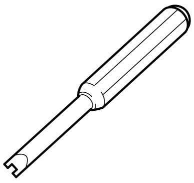
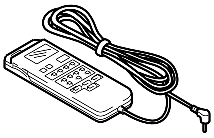


J-14



J-15



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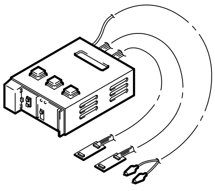

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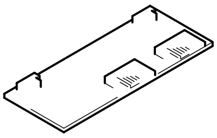

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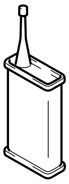

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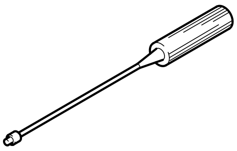
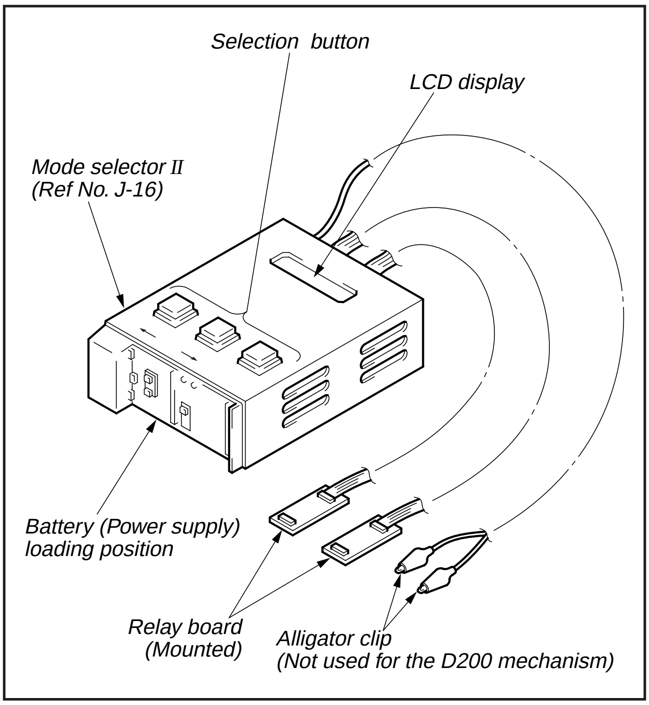


(Original : Page 8)

2-5. USE OF MODE SELECTOR II

2-5-1. Outline

This unit is a mechanism drive tool which supplements the maintenance of each mechanism deck. Its functions are described below.


Selection button
LCD display
Mode selector II
(Ref No. J-16)
Battery (Power supply)
loading position
Relay board
(Mounted)
Alligator clip
(Not used for the D200 mechanism)

1. Manual test

A mode which drives the motor only while the switch is ON. It enables the operator to control the motor as desired.

2. Step test

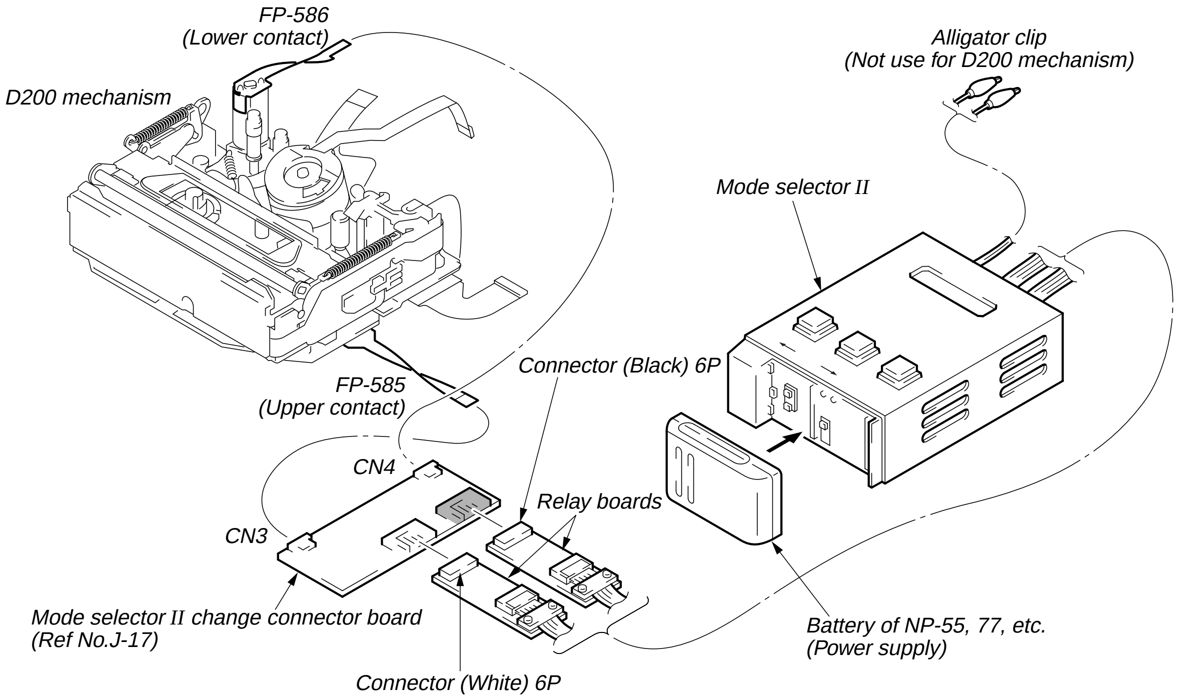
A mode which drives the motor until the current condition detected by the sensor changes to another condition. It enables the movements made by the motor in each operation to be controlled while being checked.

3. Auto test

The "D200" mechanism cannot perform "Auto test" correctly because the terminals of other mechanism decks and a loading motor different.

Note : "D200" (name of mechanism) is not displayed on the MECHA SELECT screen, however the transition order of mode switch codes and mechanism condition (position) is the same as that of D mechanism, select the "D" for mechanism selection.

Mode Selector II (J-6082-282-A) Connection


FP-586
(Lower contact)
D200 mechanism
Alligator clip
(Not use for D200 mechanism)
Mode selector II
Connector (Black) 6P
FP-585
(Upper contact)
CN4
Relay boards
CN3
Mode selector II change connector board
(Ref No.J-17)
Connector (White) 6P
Battery of NP-55, 77, etc.
(Power supply)

Note : Regarding the text with underline, refer to the original manual (D mechanism).

(Original : Page 12)

3. MECHANISM SECTION CHECK, ADJUSTMENTS AND REPRACEMENTS

3-1. DRUM ASSEMBLY (MOTOR FPC ASSEMBLY AND ELASTIC CONNECTORS)

1. Removing

<Motor FPC assembly and elastic connectors>

- Remove the two screws to remove the motor FPC assembly and elastic connectors.

<Drum assembly>

- Remove the three of drum fitting screw assembly to remove the drum assembly.

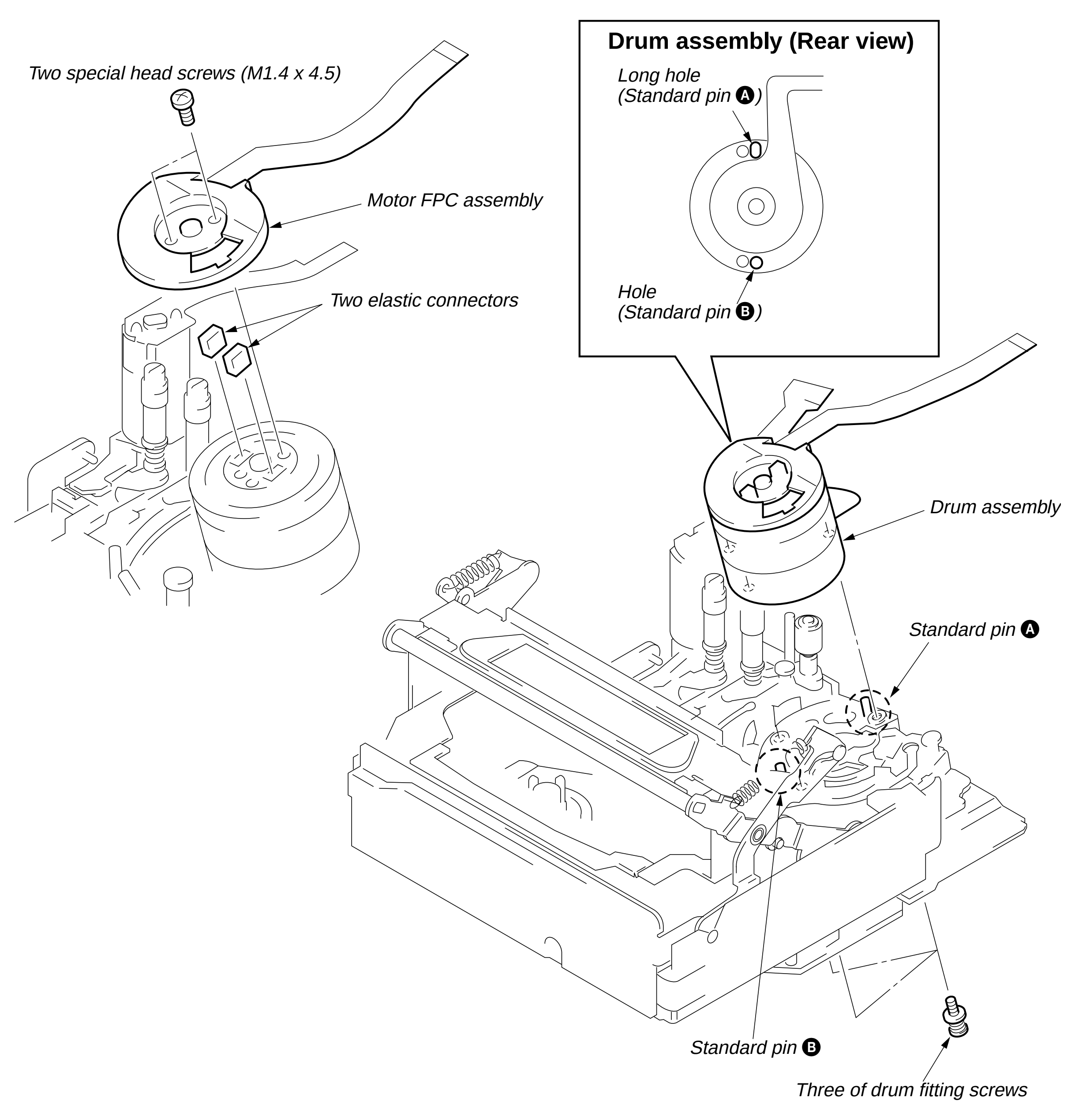
2. Attaching

<Motor FPC assembly and elastic connectors>

1) Attach the elastic connectors.
2) Attach the motor FPC assembly with two screws. (Pay attention to adjust the position of holes.)
   Fixing torque: 0.0490 N • m (0.5 kg • cm)

<Drum assembly>

1) Attach the holes on the rear side of drum assembly to standard pin. (Pay attention to the direction of the drum.)
2) Attach the three of drum fitting screw assembly.
   Fixing torque: 0.0294 N • m (0.3 kg • cm)
3) Refer to 2-1., perform the cleaning of drum assembly.
4) Carry out the tape path adjustment. (Refer to "2-4. TAPE PATH ADJUSTMENT".)


Two special head screws (M1.4 x 4.5)
Motor FPC assembly
Two elastic connectors
Drum assembly (Rear view)
Long hole (Standard pin Ⓐ)
Hole (Standard pin Ⓑ)
Drum assembly
Standard pin Ⓐ
Standard pin Ⓑ
Three of drum fitting screws

(Original : Page 15)

3-8. LM MOTOR ASSEMBLY

1. Removing

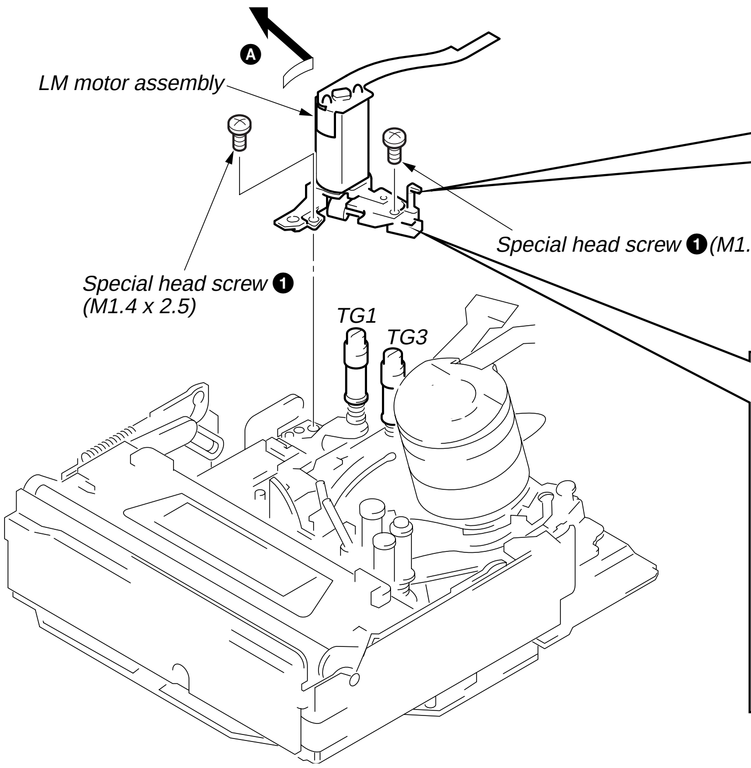
1) Set the LE—STOP mode.
2) Remove the two of screws❶ to remove the LM motor assembly in the direction of arrow Ⓐ.
3) Refer to figure III, to remove the each parts.

2. Attaching

1) Refer to figure III, to attach the each parts.
2) Set the LE—STOP mode.
3) Attach the LM motor assembly with the two of screws❶ in the direction of arrow Ⓑ. (See figure. II)
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
4) Hook the torsion spring of HC roller assembly. (See figure. I)

<Note for replacement of the warm shaft assembly>

- Apply the grease which is applied to the warm shaft assembly before replacement to ► (Fig. III) of the motor holder assembly.


Ⓐ
LM motor assembly
Special head screw ❶ (M1.4 x 2.5)
Special head screw ❶ (M1.4 x 2.5)
TG1
TG3

Hooking the torsion spring.

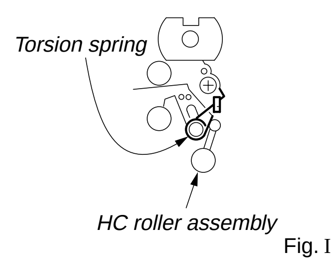

Torsion spring
HC roller assembly

Fig. I

Attaching the LM motor assembly.

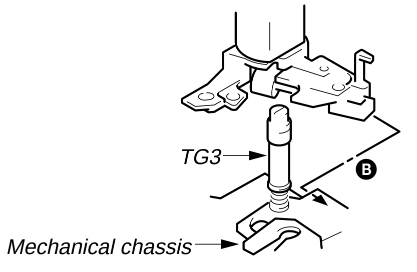
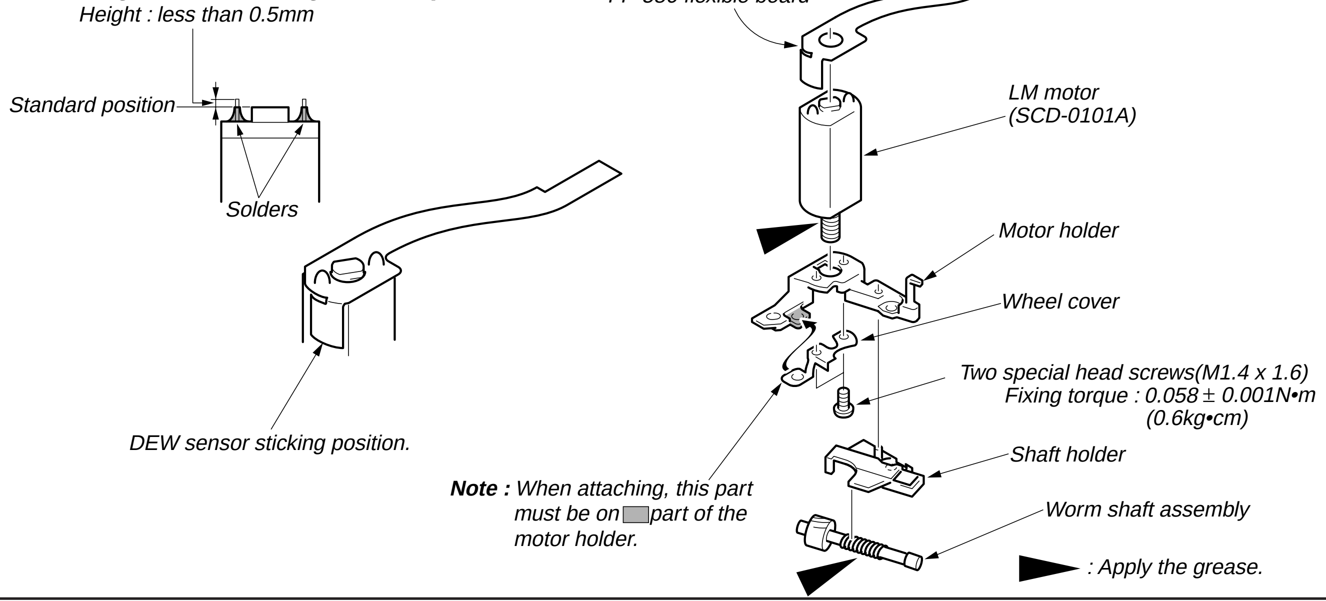

TG3
Ⓑ
Mechanical chassis

Fig. II

Attaching and Removing of each parts (Fig. III)


Height : less than 0.5mm
Standard position
Solders
DEW sensor sticking position.
FP-586 flexible board
LM motor (SCD-0101A)
Motor holder
Wheel cover
Two special head screws(M1.4 x 1.6) Fixing torque : 0.058 ± 0.001N•m (0.6kg•cm)
Shaft holder
Worm shaft assembly
► : Apply the grease.

Note : When attaching, this part must be on ▨ part of the motor holder.

Note : Regarding the text with underline, refer to the original manual (D mechanism).

(Original : Page 18)

3-13. T HARD BRAKE, L BRAKE, S BRAKE ARM, S HARD AND CC SWITCH COVER

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove the CC switch cover.

Note: Take note of two claws Ⓐ and Ⓑ.

3) Refer to 3-10. to remove the LED base assembly.
4) Remove the tension spring ❶ from the side of LS chassis, then remove the S brake arm, torsion spring and S hard.
5) Remove the tension spring ❷ from the side of L brake, remove the T hard brake together with the tension spring ❷.
6) Remove the L brake.

2. Attaching

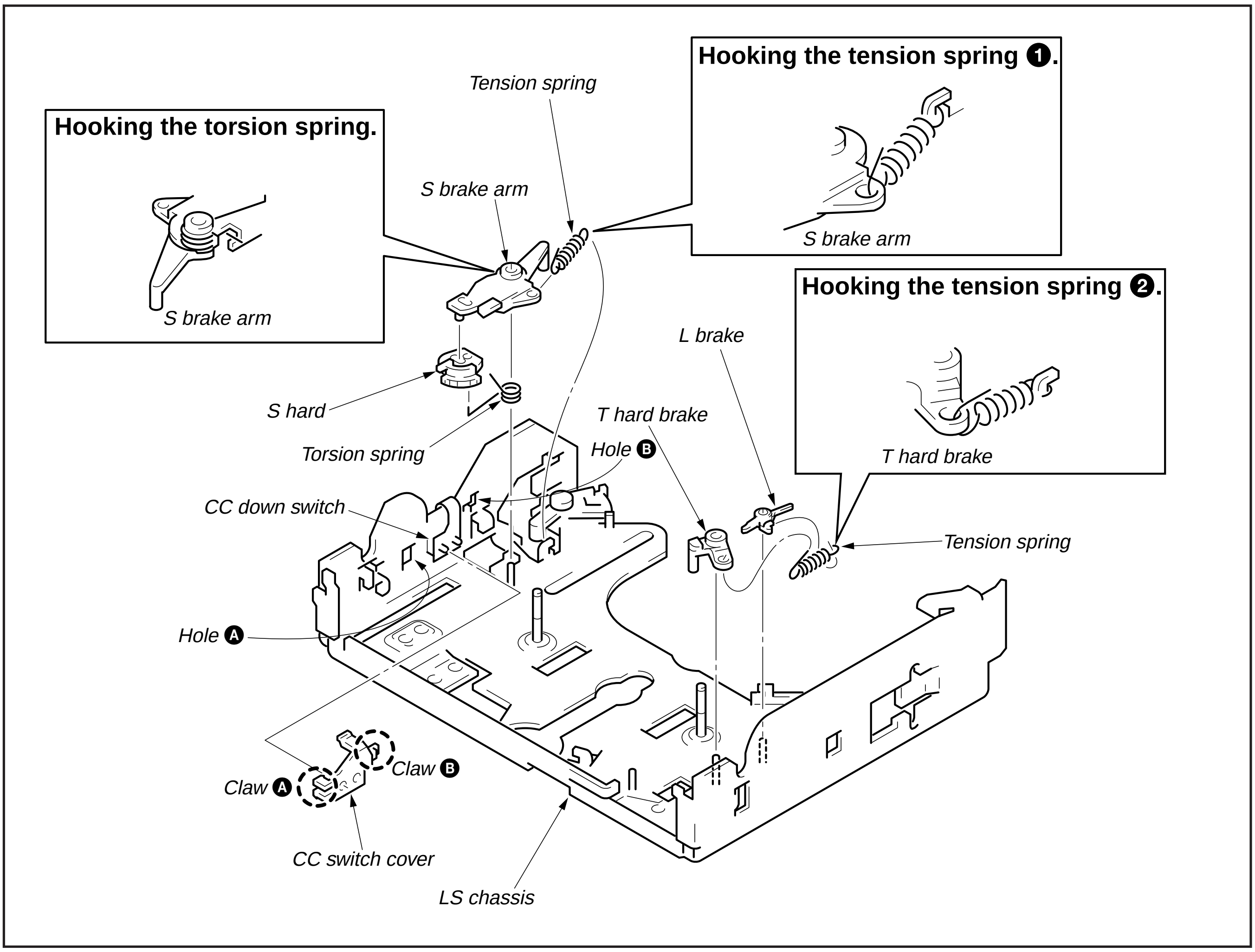
1) Attach the S hard and torsion spring to the S brake arm.

Note: Pay attention to attach the spring and S hard, and the hooking position of spring.

2) Hook the tension spring ❶ to the S brake arm, then attach the S brake arm to the LS chassis.

Note: Pay attention to direction appoint at spring hook.

3) Hook the tension spring ❶ to the side of LS chassis.
4) Attach the L brake.
5) Hook the tension spring ❷ to the T hard brake , then attach the T hard brake to the LS chassis with hooking the tension spring ❷ to the L brake.
6) Refer to 3-10. to attach the LED base assembly.
7) Attach the CC switch cover so that claws Ⓐ and Ⓑ are into holes Ⓐ and Ⓑ each.
8) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the torsion spring.
S brake arm
Tension spring
S brake arm
Hooking the tension spring ❶.
S brake arm
Hooking the tension spring ❷.
L brake
T hard brake
S hard
T hard brake
Torsion spring
Hole Ⓑ
Tension spring
CC down switch
Hole Ⓐ
Claw Ⓑ
Claw Ⓐ
CC switch cover
LS chassis

(Original : Page 21)
(Correction-1: Page 2)

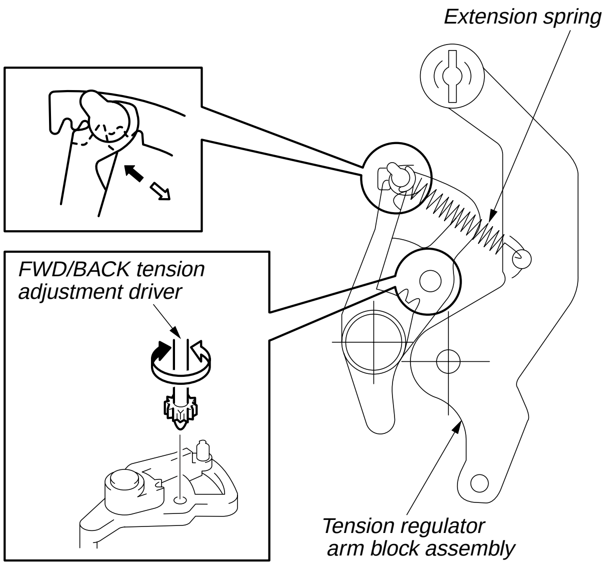
3-17. FWD BACK TENSION ADJUSTMENT

1. Adjusting

1) Set the Mini DV torque cassette (Ref No. J-6).
2) Set the REC mode, then check that the reading of S side is 3.9 to 4.6 (x 10^{-1} mN • m) and the change is lower than 0.5 (x 10^{-1} mN • m). If the reading is not satisfied the specification, adjust the followings.

- If the reading is higher than the specification (weaken the tension of spring)
  Turn the adjusting screwdriver counterclockwise to satisfy the specification.
- If the reading is lower than the specification (strengthen the tension of spring)
  Turn the adjusting screwdriver clockwise to satisfy the specification.

Note: When the FWD/BACK tension adjustment driver is turned, take out the torque cassette once.


Extension spring
FWD/BACK tension adjustment driver
Tension regulator arm block assembly

- When the reading is more than the standard value, turn the FWD/BACK tension adjustment driver in the direction of ⇨.
- When the reading is less than the standard value, turn the FWD/BACK tension adjustment driver in the direction of ➡.

(Original : Page 22)
(Correction-1: Page 2)

3-18. REEL TABLE TORQUE CHECK

- Adjusting

[FWD torque]

1) Set the Mini DV torque cassette (Ref No. J-6).
2) Set the FWD mode, then check that the torque value of the T reel table is 5.5 to 12.5 (x 10^{-1} mN • m) at the center value of deflection and the change is 1 (x 10^{-1} mN • m).

[RVS torque]

1) Set the Mini DV torque cassette (Ref No. J-6).
2) Set the RVS mode (by using EDIT SEARCH (–) button), then check that the torque value of the S Reel table is 11.0 to 20.0 (x 10^{-1} mN • m) at the center value of deflection.
   Note 1

If the above values are not satisfied, check the position of FWD (tension regulator). Replace each reel table if there is no abnormal.

Note 1: Some speed of EDIT SEARCH is changed by double step due to strength of pressing. Select Normal speed (same as FWD) for the torque check.

Note : Regarding the text with underline, refer to the original manual (D mechanism).

(Original : Page 24)

3-22. LS CHASSIS BLOCK ASSEMBLY, GOOSENECK ASSEMBLY, RELAY GEAR, COMPULSION ARM ASSEMBLY CAM SLIDER AND PINCH RELEASE ARM

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the screw ① and remove the FPC holder.
4) Set the S. OFF mode.
5) Remove the washer to remove the gooseneck assembly and relay gear.
6) Set the D. ON mode, remove the two of screw ②, then set the S. OFF mode.

Note: Do not remove the cam slider from the LS chassis except the replacement.

7) Remove the two of screw ③ and collar, remove the LS chassis block assembly.

Note: When removing the LS chassis block assembly, remove it pressing the tension regulator arm block assembly not to give a shock to the tension regulator band. (Remove it pressing the pinch arm as well.)

8) Remove the compulsion arm assembly and pinch release arm.

Note:

Ⓡ : When removing.

Ⓐ : When attaching.

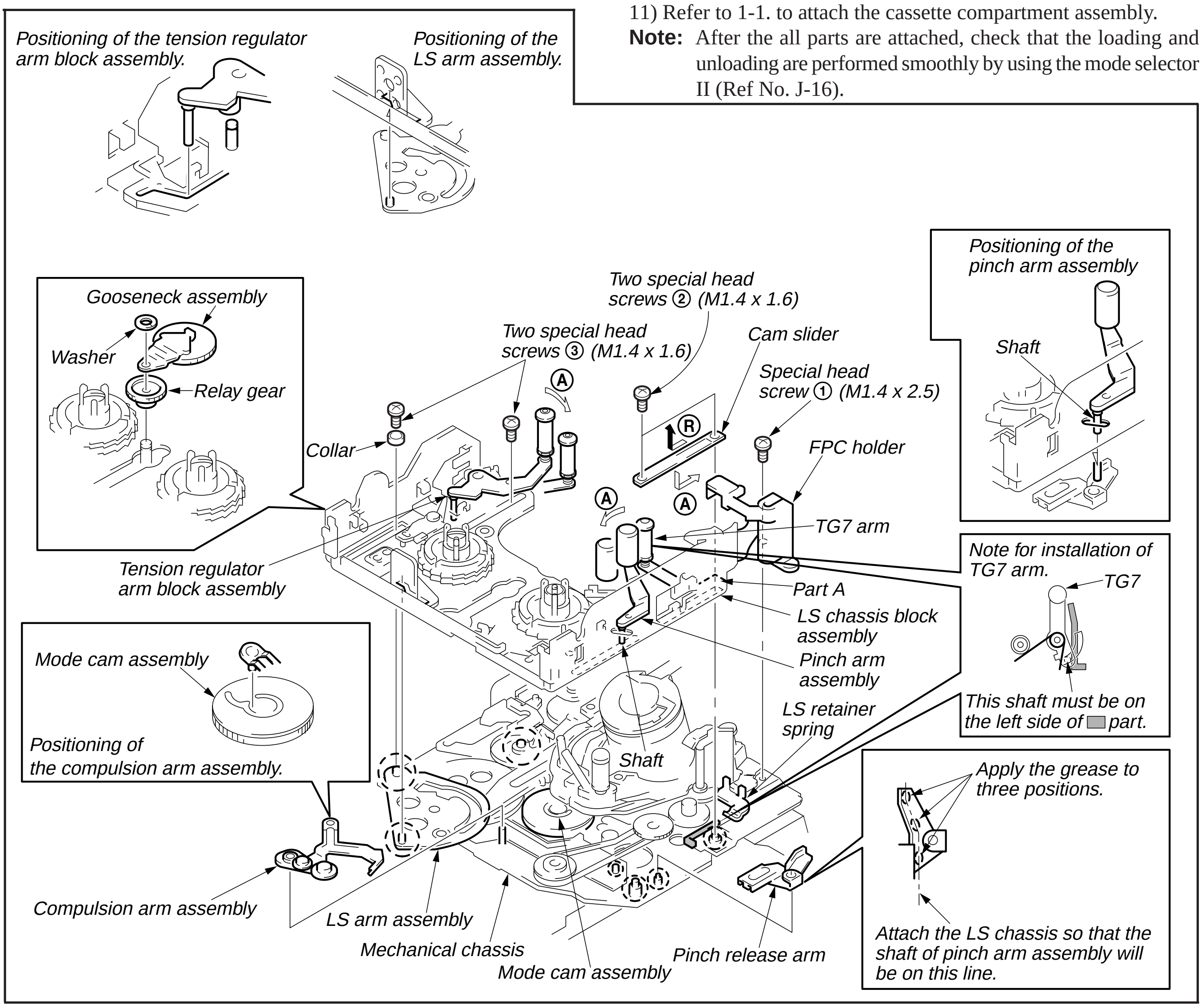
2. Attaching

1) Set the S. OFF mode.
2) Apply the grease (◌:seven positions, 3 mm dia.) to the mechanical chassis and LS arm assembly.
   Grease: Floil Grease (SG-941)
3) Attach the compulsion arm assembly and pinch release arm.
4) Apply the grease (◌:three positions, 3 mm dia.) to the pinch release arm, then put the LS chassis block assembly so that the part A of LS chassis gets into under the LS chassis retainer spring.

Note: Pay attention to adjust each position of the LS arm assembly, TG7 arm and pinch arm assembly.

5) Attach in the two of screw ②.
   Fixing torque: 0.0981 N • m (1 kg • cm)
6) Hole up a little the tension regulator side of LS chassis, then adjust positioning of the tension regulator arm shaft.
7) Set the D. ON mode, attach the two of screw ③.(do not forget to put in the collar)
   Fixing torque: 0.0981 N • m (1 kg • cm)
8) Attach the gooseneck assembly with a relay gear and a washer.
9) Attach the FPC holder with a screw ①.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
10) Refer to 3-10. to attach the LED base assembly.
11) Refer to 1-1. to attach the cassette compartment assembly.

Note: After the all parts are attached, check that the loading and unloading are performed smoothly by using the mode selector II (Ref No. J-16).


Positioning of the tension regulator arm block assembly.
Positioning of the LS arm assembly.
Positioning of the pinch arm assembly
Shaft
Gooseneck assembly
Washer
Relay gear
Collar
Two special head screws ③ (M1.4 x 1.6)
Two special head screws ② (M1.4 x 1.6)
Cam slider
Special head screw ① (M1.4 x 2.5)
FPC holder
Ⓐ
Ⓡ
TG7 arm
Tension regulator arm block assembly
Note for installation of TG7 arm.
TG7
Part A
LS chassis block assembly
Pinch arm assembly
LS retainer spring
This shaft must be on the left side of ▨ part.
Mode cam assembly
Positioning of the compulsion arm assembly.
Shaft
Apply the grease to three positions.
Compulsion arm assembly
LS arm assembly
Mechanical chassis
Mode cam assembly
Pinch release arm
Attach the LS chassis so that the shaft of pinch arm assembly will be on this line.

Note : Regarding the text with underline, refer to the original manual (D mechanism).

(Original : Page 28)

3-25. MODE CAM ASSEMBLY AND FP-585 FLEXIBLE BOARD

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and compulsion arm assembly.
4) Set the STOP—RVS mode.
5) Remove the screw ① and keep away from the rail (S).
6) Remove a screw ② and two of screw ③, then remove the mode cam assembly and FP-585 flexible board.

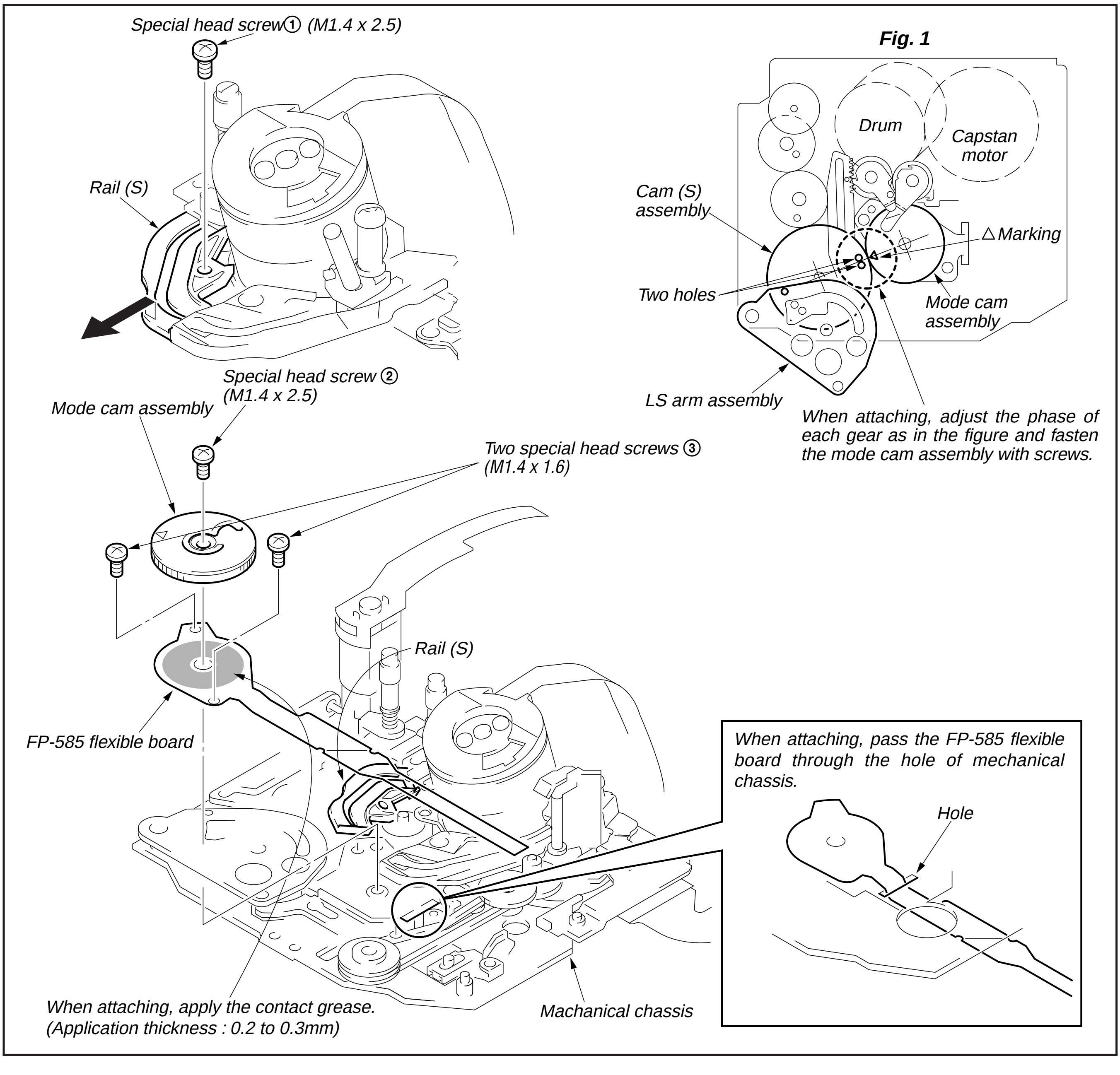
Note: Pay attention the FP-585 flexible board is connected to the mode selector II change connector board (Ref No. J-17).

2. Attaching

1) Attach the FP-585 flexible board with two of screw ③ and apply the contact grease to a pattern.
   Fixing torque: 0.0981 N•m (1 kg•cm)
   Thickness application of grease: 0.2 to 0.3 mm (A little overflow is no problem.)
2) Put the mode cam assembly on the fitting shaft. (Do not fasten with a screw.)
3) Attach the rail (S) with a screw ① and load by using the mode selector II as in the figure I. (Condition: the phase of each gear is matched. S. OFF mode.)
   Fixing torque: 0.0588 N•m (0.6 kg•cm)
4) Pay attention to the phase with the cam (S) assembly. Fix the mode cam assembly with a screw ②.
   Fixing torque: 0.0588 N•m (0.6 kg•cm)

Note: Connect the FP-585 flexible board and mode selector II change connector board. (Ref No.J-17)

5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw① (M1.4 x 2.5)
Rail (S)
Special head screw ② (M1.4 x 2.5)
Mode cam assembly
Two special head screws ③ (M1.4 x 1.6)
Rail (S)
FP-585 flexible board
Machanical chassis
Fig. 1
Drum
Capstan motor
Cam (S) assembly
△Marking
Two holes
Mode cam assembly
LS arm assembly
Hole

When attaching, adjust the phase of each gear as in the figure and fasten the mode cam assembly with screws.

When attaching, pass the FP-585 flexible board through the hole of mechanical chassis.

When attaching, apply the contact grease. (Application thickness : 0.2 to 0.3mm)

Note : Regarding the text with underline, refer to the original manual (D mechanism).

(Original : Page 29)

3-26. LS ARM ASSEMBLY, EJECT LEVER, CAM (S) SPACER AND CAM (S) ASSEMBLY

1. Removing

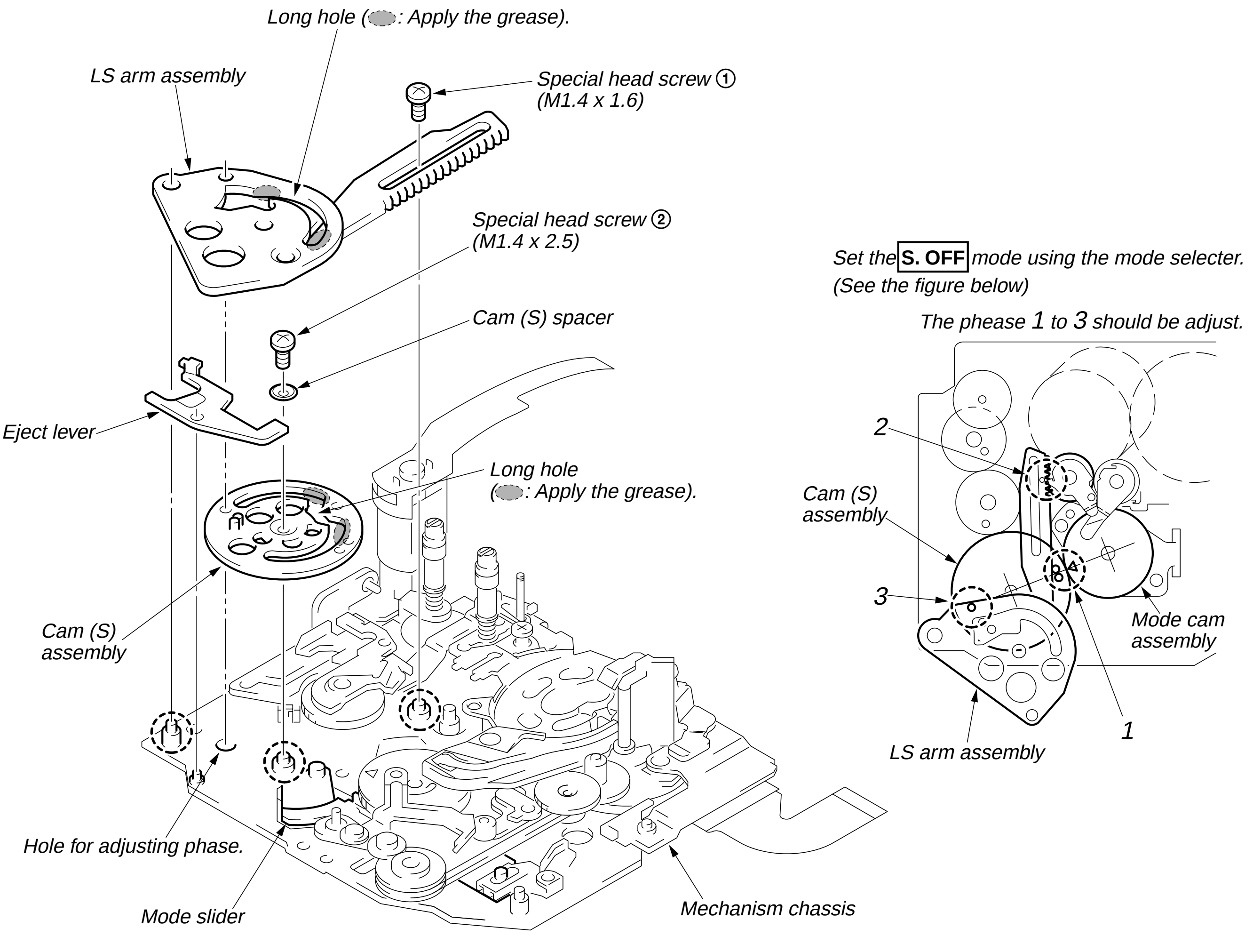
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-10. to remove the LED base assembly.
4) Refer to 3-22 to remove the gooseneck assembly and LS chassis block assembly.
5) Refer to 3-23. to remove the GL (S) block assembly.
6) Set the S. OFF mode, remove the screw ①, then remove the LS arm assembly.
7) Remove the eject lever.
8) Remove the screw ②, then remove the cam (S) spacer and cam (S) assembly.

2. Attaching

1) Check the S. OFF mode and apply the grease (◌:three positions, 1.5 mm dia.) to the mechanical chassis.
   Grease: Floil Grease (SG-941)

Note: S. OFF mode is the condition that the phase of each gear is matched.

2) Apply the grease (◌: two positions, 1.5 mm dia.) into a long hole of the cam (S) assembly, attach it with attention to the phase.
   Grease: Floil Grease (SG-941)
3) Attach the screw ②.(Do not forget to attach in the cam (S) spacer)
   Fixing torque: 0.0981 N•m (1 kg•cm)
4) Apply the grease (two positions, 1.5 mm dia.) into a long hole of the LS arm assembly. Pay attention to the phase with the cam (S) assembly and mode slider, and attach with a screw ①.
   Fixing torque: 0.0981 N•m (1 kg•cm)
5) Refer to 3-23 to attach the GL (S) block assembly.
6) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
7) Refer to 3-10. to attach the LED base assembly.
8) Refer to 3-1. to attach the drum assembly.
9) Refer to 1-1. to attach the cassette compartment assembly.

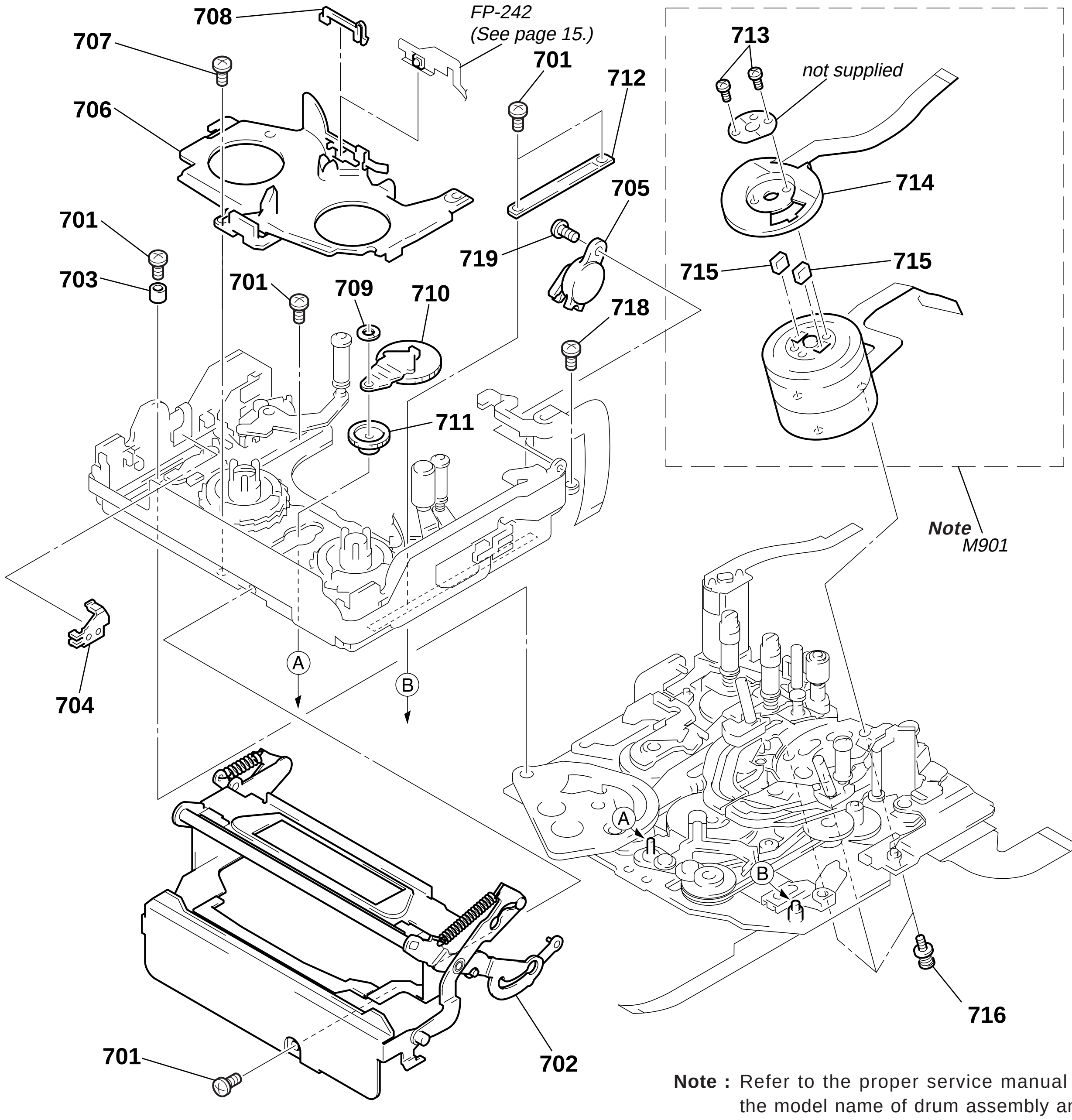

Long hole (●: Apply the grease).
LS arm assembly
Special head screw ①
(M1.4 x 1.6)
Special head screw ②
(M1.4 x 2.5)
Cam (S) spacer
Eject lever
Long hole
(●: Apply the grease).
Cam (S)
assembly
Hole for adjusting phase.
Mode slider
Mechanism chassis
Set the S. OFF mode using the mode selecter.
(See the figure below)
The phease 1 to 3 should be adjust.
2
Cam (S)
assembly
3
Mode cam
assembly
1
LS arm assembly

5. EXPLODED VIEWS

NOTE:

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

5-1. CASSETTE COMPARTMENT AND DRUM ASSEMBLY


708
707
706
701
703
701
709
710
711
704
FP-242
(See page 15.)
701
712
705
719
718
713
not supplied
714
715
715
Note
M901
A
B
A
B
716
702
701

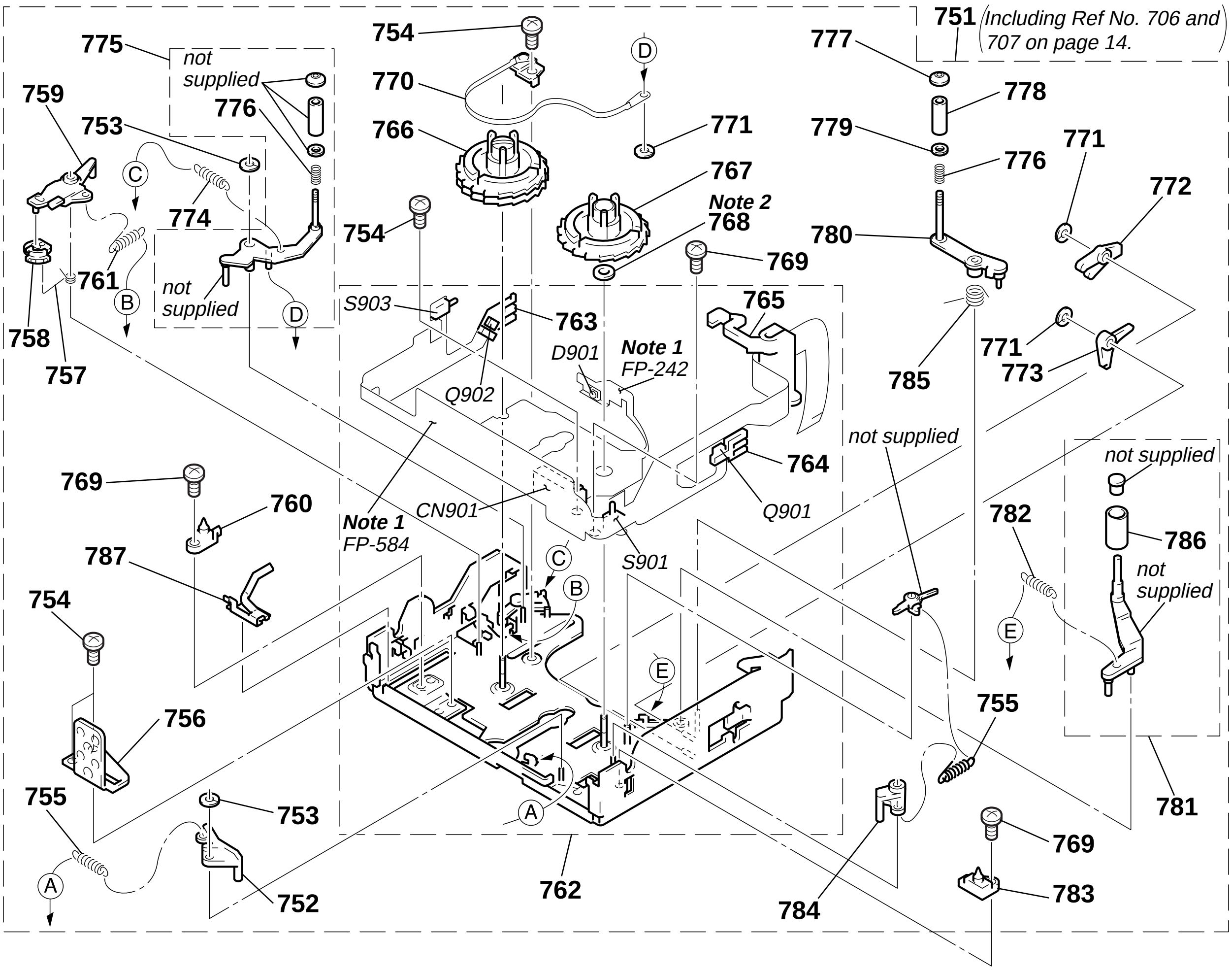
Note : Refer to the proper service manual since the model name of drum assembly and the Parts No. are different according to sets.

REF. No.	Part No.	Description	Remark
701	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD	
702	X-3947-480-2	COMPARTMENT ASSY, CASSETTE	
703	3-748-703-01	COLLAR	
704	3-976-449-02	COVER, CC SWITCH	
705	3-976-446-01	DAMPER	
706	X-3748-613-3	BASE ASSY, LED	
707	3-704-197-21	SCREW (M1.4x2.5), LOCKING	
708	3-748-683-01	HOLDER, LED	
709	3-315-414-31	WASHER	
710	X-3748-609-2	GOOSENECK ASSY	
711	3-748-736-01	GEAR, RELAY	
712	3-748-702-02	SLIDER, CAM	
713	3-703-816-74	SCREW (M1.4X4.5), SPECIAL HEAD	
714	X-3944-897-2	FPC ASSY, MOTOR	
715	1-770-363-11	ELASTIC CONNECTOR	
716	A-7026-009-B	SCREW ASSY, DRUM FITTING	
718	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD	
719	3-962-346-01	SCREW (M 1.6)	
M901	***See note.***	DRUM ASSY	

5-2 LS CHASSIS ASSEMBLY

Note 1 : About FP-242 and FP-584
The FP-242 and FP-584 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 LS chassis (S) assembly, They are not supplied separately because the high precision for installation is needed.

Note 2 : Selecting the T washer
Select proper parts for the Ref. No. 768 T washer according to “Height adjustment for T reel table assembly” on page 23 in the “DV MECHANICAL ADJUSTMENT MANUAL I” (9-973-815-11).



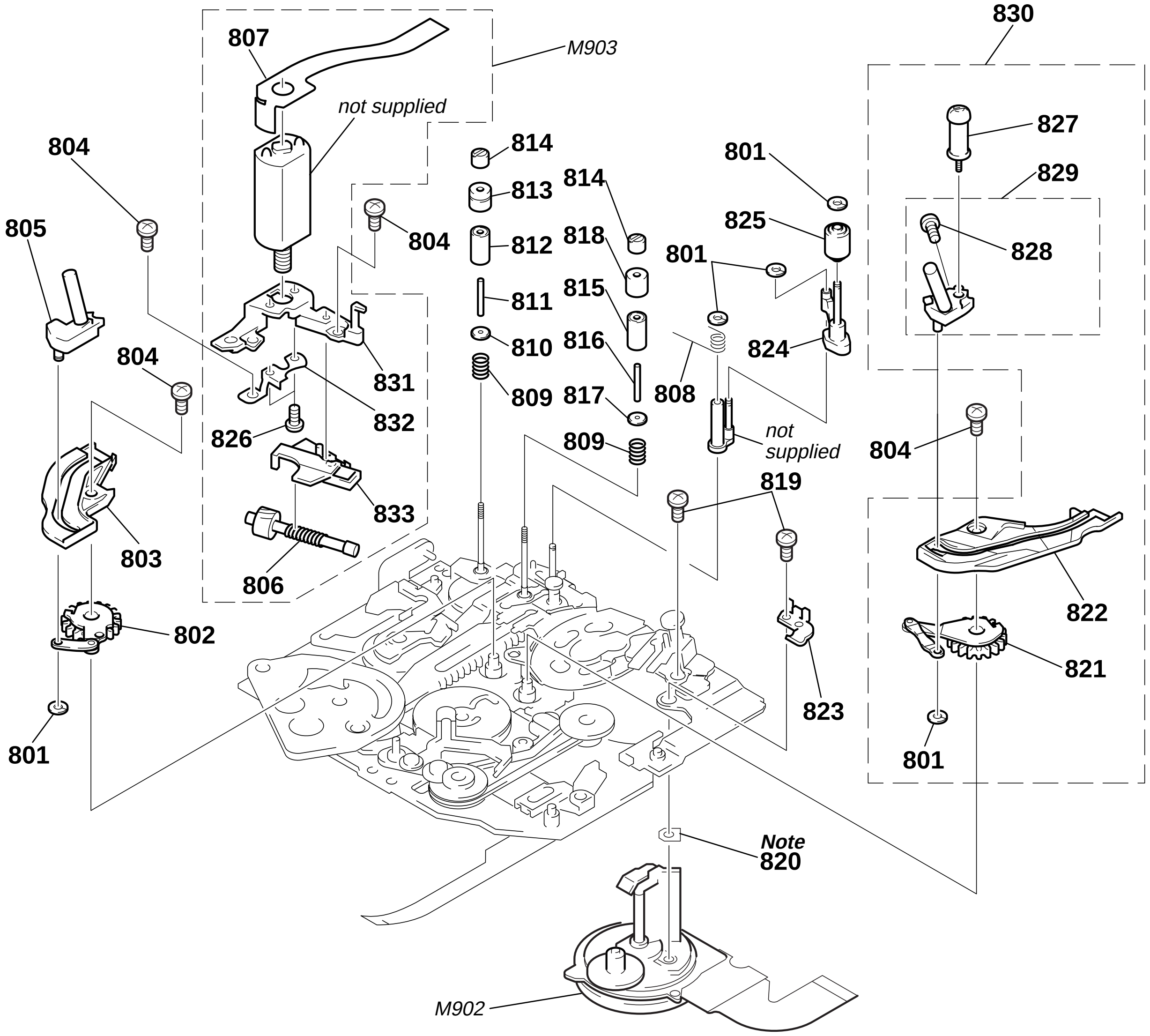
751 (Including Ref No. 706 and 707 on page 14.)
775
not supplied
759
753
776
C
774
761
B
not supplied
D
758
757
754
770
766
D
771
767
Note 2
768
769
754
S903
763
D901
Note 1
FP-242
765
Q902
777
778
779
776
771
772
780
785
771
773
not supplied
764
Q901
not supplied
786
not supplied
782
E
769
760
787
Note 1
FP-584
CN901
C
B
S901
754
E
756
755
753
A
752
A
762
784
755
781
769
783

REF. No.	Part No.	Description	Remark
751	A-7026-030-A	CHASSIS (D2) BLOCK ASSY, LS (for Service)	
752	3-748-775-02	BRAKE, RVS	
753	3-315-414-31	WASHER	
754	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD	
755	3-748-776-01	SPRING, TENSION	
756	3-748-681-01	PLATE, LS CAM	
757	3-748-774-01	SPRING, TORSION	
758	3-748-773-04	HARD, S	
759	3-748-815-02	ARM, S BRAKE	
760	3-748-677-01	POSITIONING, S	
761	3-968-656-01	SPRING, TENSION	
762	A-7026-025-A	CHASSIS (S) (D2) ASSY, LS	
763	3-976-644-01	HOLDER (S), SENSOR	
764	3-976-458-01	HOLDER (T), SENSOR	
765	3-976-824-01	HOLDER, FPC	
766	X-3748-614-2	TABLE ASSY, REEL, S	
767	X-3748-615-2	TABLE ASSY, REEL, T	
768	3-748-682-01	WASHER, T (t:0.25, Green)	**Note 2**
768	3-748-682-11	WASHER, T (t:0.1, Yellow)	**Note 2**
768	3-748-682-21	WASHER, T (t:0.35, Black)	**Note 2**
769	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD	
770	X-3748-618-2	BAND ASSY, TENSION REGULATOR	

REF. No.	Part No.	Description	Remark
771	3-315-384-11	WASHER, STOPPER	
772	3-748-680-01	FOLLOWER, SLIDER	
773	3-748-679-01	LEVER, LOCK	
774	3-748-822-02	SPRING, EXTENSION	
775	A-7026-020-B	ARM BLOCK ASSY, TENSION REGULATOR	
776	3-940-891-01	SPRING, COMPRESSION	
777	3-966-194-01	FLANGE, TG7 UPPER	
778	3-748-777-02	TG7	
779	3-964-614-01	FLANGE, TG7 LOWER	
780	X-3748-616-2	ARM ASSY, TG7	
781	X-3748-630-2	ARM ASSY, PINCH	
782	3-748-603-01	SPRING, TENSION	
783	3-748-678-01	POSITIONING, T	
784	3-748-778-02	BRAKE, T HARD	
785	3-748-675-01	SPRING, TORSION	
786	X-3946-959-1	ROLLER ASSY (DIA. 5.6), PINCH	
787	3-973-067-01	SPRING, C.C. UP	
CN901	1-770-312-11	CONNECTOR 4P	
D901	8-719-050-98	DIODE LN57.SO	
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)	
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)	
S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)	
S903	1-572-467-21	SWITCH, PUSH (1 KEY)(C.C. DOWN)	

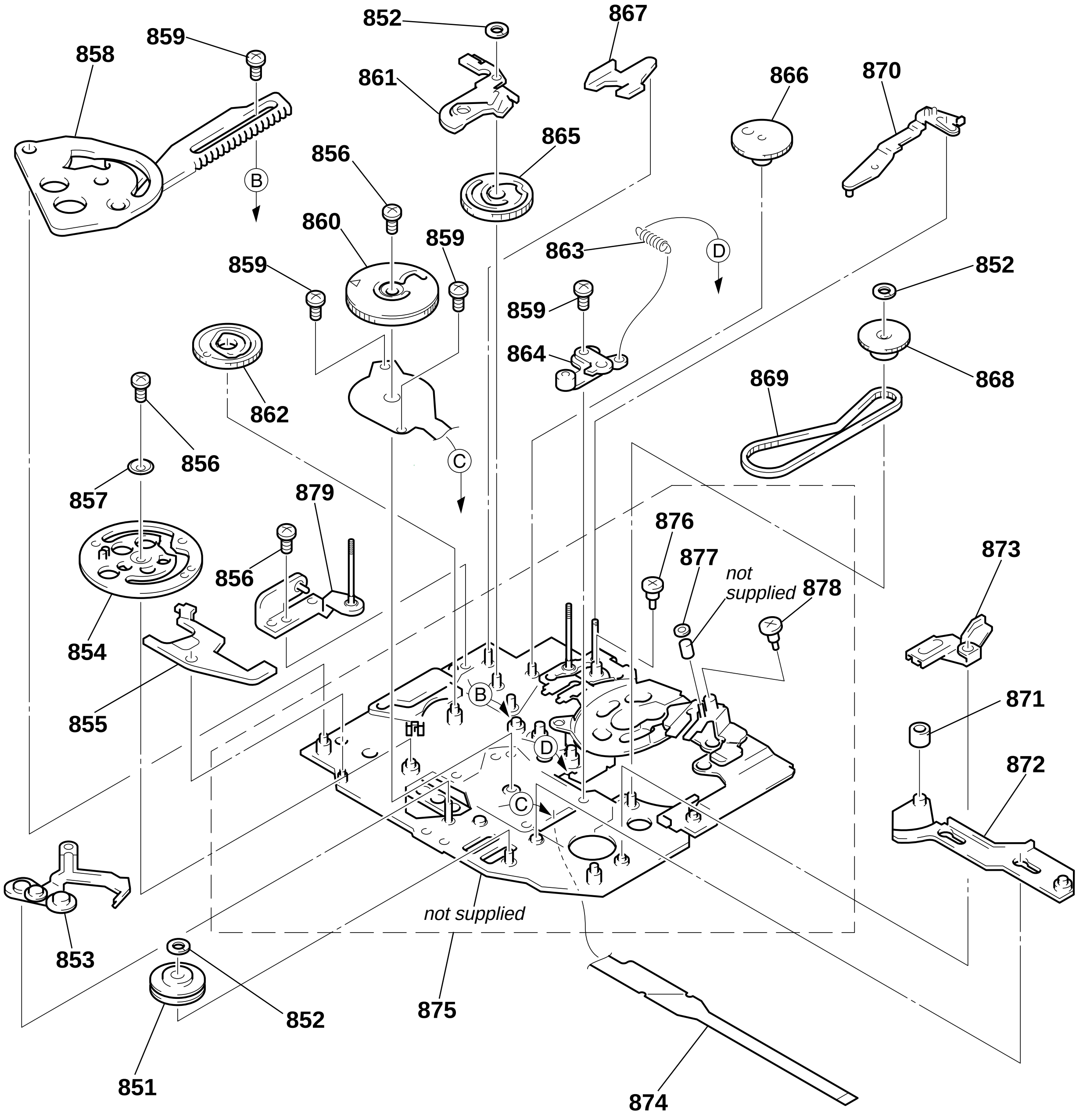
5-3. MECHANISM CHASSIS ASSEMBLY (1)

Note: Be sure to remember the installed position (one of two positions), direction and thickness of the Ref. No. 820 (head spacer) when the M902 (capstan motor) is removed. Refer to “3-9. Capstan motor” on page 15 in the DV MECHANICAL ADJUSTMENT MANUAL I (9-973-815-11) for details. The thickness of head spacer is normally 100 µm. If it is lost, two 50 µm head spacers will be needed. Be careful not to loose it.


830
807
M903
not supplied
804
814
813
814
801
827
829
805
804
812
818
825
801
828
811
815
810
816
824
804
831
809
817
808
832
826
809
not supplied
804
819
833
803
806
802
822
821
823
801
801
Note
820
M902

REF. No.	Part No.	Description	Remark
801	3-315-414-31	WASHER	
802	X-3748-623-1	GL (S) ASSY	
803	3-748-600-02	RAIL (S)	
804	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD	
805	X-3748-622-2	COASTER (S) ASSY	
806	X-3748-633-1	SHAFT ASSY, WORM	
807	1-666-102-11	FP-586 FLEXIBLE BOARD	
808	3-748-742-02	SPRING, TORSION	
809	3-966-107-01	SPRING, COMPRESSION	
810	3-966-105-01	FLANGE, TG1 LOWER	
811	3-966-100-01	SLEEVE, TG1/3	
812	3-966-099-01	ROLLER, TG1/3	
813	3-966-102-01	FLANGE, TG1/3 UPPER	
814	3-966-101-01	NUT, TG1/3	
815	3-966-099-11	ROLLER, TG1/3	
816	3-966-100-11	SLEEVE, TG1/3	
817	3-966-106-01	FLANGE, TG3 LOWER	
818	3-973-948-01	FLANGE (2), TG1/3 UPPER	
819	3-972-669-01	SCREW (M1.4x1.6)	
820	3-727-843-16	SPACER, HEAD (CORRECTIVE SPACER)	(t=50um)**Note**
821	X-3748-624-1	GL (T) ASSY	
822	3-748-601-02	RAIL (T)	
823	3-964-430-01	SPRING, LS RETAINER	
824	X-3748-628-2	SLIDE ASSY, HC	
825	A-7026-006-A	ROLLER ASSY, HC	
826	3-947-504-01	SCREW (M1.2x2)	
827	X-3748-626-3	TG5 ASSY	
828	3-965-211-01	SCREW (M1)	
829	X-3946-602-1	COASTER (T) ASSY (-M)	
830	A-7026-002-A	GL (T) BLOCK ASSY	
831	3-976-463-01	HOLDER (DIA.8), MOTOR	
832	3-964-429-01	COVER, WHEEL	
833	3-976-464-01	HOLDER (DIA.8), SHAFT	
M902	8-835-524-03	MOTOR, DC SCD-0101A (CAPSTAN)	
M903	A-7010-673-A	MOTOR ASSY, LM (LOADING)	

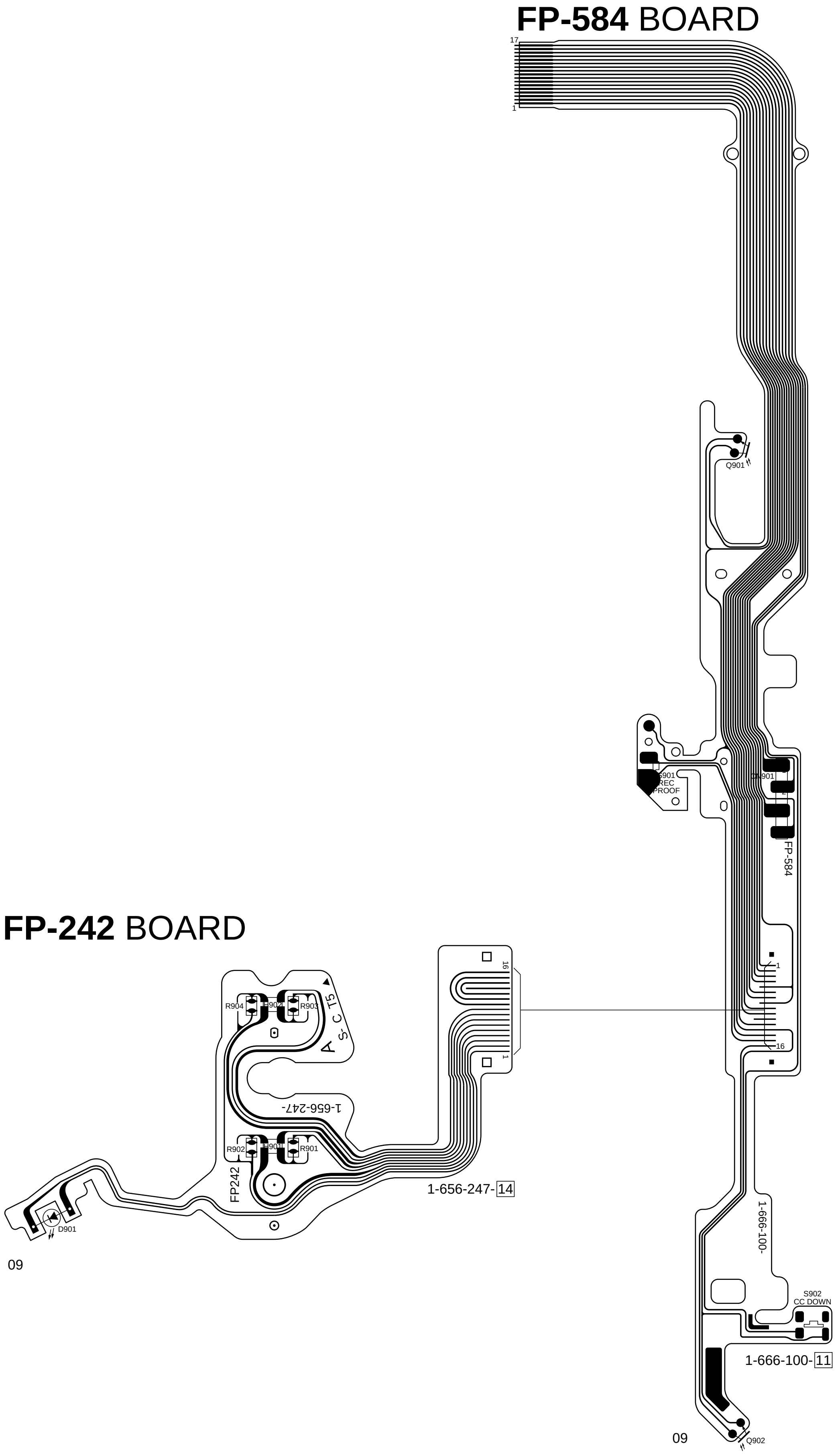
5-4. MECHANISM CHASSIS ASSEMBLY (2)

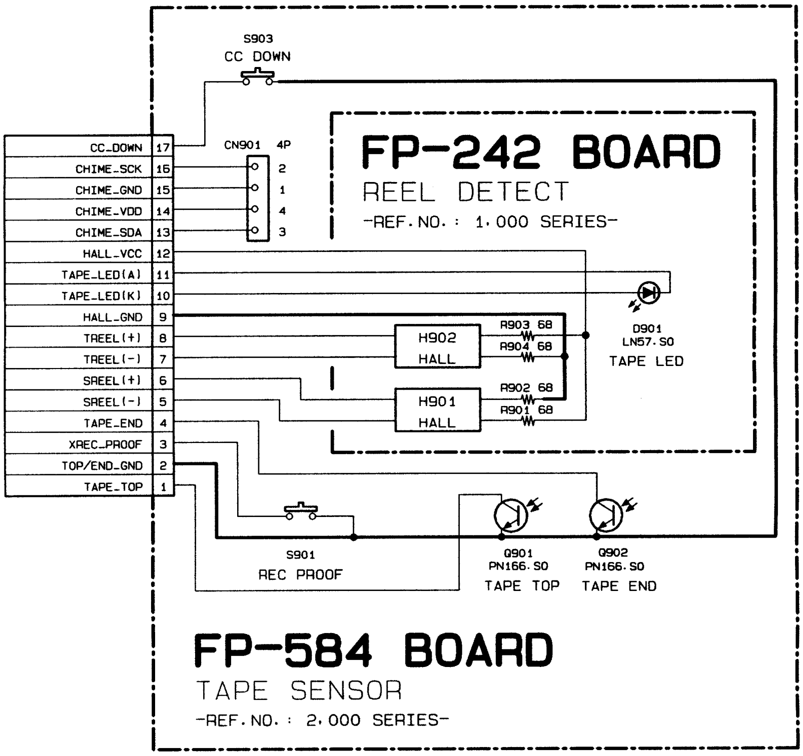

852
867
859
858
861
866
870
865
856
B
860
859
863
D
859
852
859
864
869
868
862
856
857
C
879
876
873
877
not supplied
878
856
854
B
871
855
D
872
C
not supplied
853
852
875
851
874

REF. No.	Part No.	Description	Remark
851	X-3945-640-1	PULLEY ASSY, RELAY	
852	3-315-414-31	WASHER	
853	X-3748-600-1	ARM ASSY, COMPULSION	
854	X-3748-605-1	CAM (S) ASSY	
855	3-976-452-01	LEVER, EJ	
856	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD	
857	3-976-460-01	SPACER, CAM (S)	
858	X-3748-602-2	ARM ASSY, LS	
859	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD	
860	X-3748-604-1	CAM ASSY, MODE	
861	3-748-739-02	RETAINER, GEAR	
862	3-748-740-03	GEAR, No.3	
863	3-748-602-02	SPRING, TENSION	
864	X-3748-627-1	ARM ASSY, ADJUSTMENT	
865	3-748-738-02	GEAR, No.2	

REF. No.	Part No.	Description	Remark
866	3-748-741-03	GEAR, No.1	
867	3-748-731-02	ARM, POSITION	
868	X-3945-639-1	PULLEY ASSY, CONVERSION	
869	3-748-734-01	BELT, RELAY	
870	3-974-501-01	RVS STOPPER ARM (2)	
871	3-728-109-01	ROLLER, LS	
872	3-748-647-01	SLIDER, MODE	
873	3-748-733-01	ARM, PINCH RELEASE	
874	1-666-101-11	FP-585 FLEXIBLE BOARD	
875	A-7026-023-B	CHASSIS SUB BLOCK ASSY	
876	3-748-620-02	SCREW, ADJUSTMENT	
877	4-943-288-01	WASHER	
878	3-748-605-02	SCREW, ADJUSTMENT	
879	X-3748-606-6	BASE ASSY, TG1	

6. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM


FP-584 BOARD
17
1
Q901
S901
REC
PROOF
CN901
FP-584
1
16
1-666-100-
S902
CC DOWN
1-666-100-11
09
Q902
FP-242 BOARD
16
1
R904
H902
R903
A C S- T5
1-656-247-
R902
H901
R901
FP242
1-656-247-14
D901
09


S903
CC DOWN
CN901 4P
CC_DOWN 17
CHIME_SCK 16
CHIME_GND 15
CHIME_VDD 14
CHIME_SDA 13
HALL_VCC 12
TAPE_LED(A) 11
TAPE_LED(K) 10
HALL_GND 9
TREEL(+) 8
TREEL(-) 7
SREEL(+) 6
SREEL(-) 5
TAPE_END 4
XREC_PROOF 3
TOP/END_GND 2
TAPE_TOP 1
2
1
4
3
FP-242 BOARD
REEL DETECT
-REF.NO. : 1,000 SERIES-
H902
HALL
H901
HALL
R903 68
R904 68
R902 68
R901 68
D901
LN57.SO
TAPE LED
S901
REC PROOF
Q901
PN166.SO
TAPE TOP
Q902
PN166.SO
TAPE END
FP-584 BOARD
TAPE SENSOR
-REF.NO. : 2,000 SERIES-

FP-242 **FP-584**

7. ELECTRICAL PARTS LIST

Note:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
  uPC...: μ PC..., uPD...: μ PD...

When indicating parts by reference number, please include the board name.

REF. No.	Part No.	Description	Remark
		FP-242 FLEXIBLE BOARD ********************	
	3-976-458-01	HOLDER (T), SENSOR	
	3-976-644-01	HOLDER (S), SENSOR	
		< DIODE >	
D901	8-719-050-98	DIODE LN57.SO	
		< HALL ELEMENT >	
H901	8-719-033-37	ELEMENT, HALL HW-105C	
H902	8-719-061-28	ELEMENT, HALL HW-105C-FT-V	
		< RESISTOR >	
R901	1-216-807-11	METAL CHIP 68 5%	1/16W
R902	1-216-807-11	METAL CHIP 68 5%	1/16W
R903	1-216-807-11	METAL CHIP 68 5%	1/16W
R904	1-216-807-11	METAL CHIP 68 5%	1/16W

REF. No.	Part No.	Description	Remark
		FP-584 FLEXIBLE BOARD ********************	
	3-976-824-01	HOLDER, FPC	
		< CONNECTOR >	
CN901	1-770-312-11	CONNECTOR 4P	
		< TRANSISTOR >	
Q901	8-729-028-71	TRANSISTOR PN166.SO	
Q902	8-729-028-71	TRANSISTOR PN166.SO	
		< SWITCH >	
S901	1-762-351-11	SWITCH, PUSH (1 KEY) (REC PROOF)	
S903	1-572-467-21	SWITCH, PUSH (1 KEY) (CC DOWN)	

Average power consumption (when using the battery pack)
During camera recording using LCD
4.2 W
Viewfinder
3.9 W (PC100),
3.7 W (PC100E)
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.)
61 × 127 × 123 mm
(2 1/2 × 5 × 4 7/8 in.) (w/h/d)
Mass (approx.)
550 g (1 lb 3 oz)
main unit only
650 g (1 lb 7 oz)
including the battery pack, NP-FM50, cassette DVM60 and lens cap
Supplied accessories
See page 2.

AC power adaptor

Power requirements
100 - 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in the operating mode
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.)
125 × 39 × 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
PC100: 280 g (9.8 oz)
excluding power cord
PC100E: 280 g (9.8 oz)
excluding mains lead
Cord length (approx.)
Power cord: 6.6 feet (2 m)
Connecting cord: 5.2 feet (1.6 m)

Battery pack

Output voltage
DC 7.2 V
Capacity
8.5 Wh
Dimensions (approx.)
38.2 × 20.5 × 55.6 mm
(1 9/16 × 13/16 × 2 1/4 in.) (w/h/d)
Mass (approx.)
76 g (2.7 oz)
Type
Lithium ion

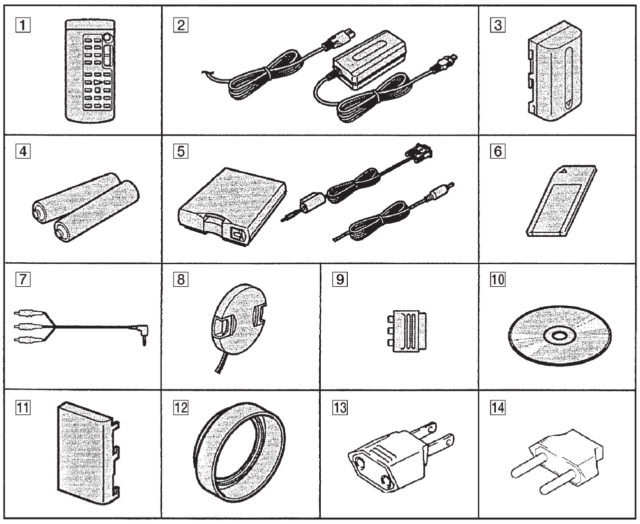
"Memory Stick"

Memory
Flash memory
4MB: MSA-4A
Operating voltage
2.7 V -3.6 V
Power consumption
Approx. 45 mA in the operating mode
Approx. 130 µA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w/h/d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

• SUPPLIED ACCESSORIES

Check that the following accessories are supplied with your camcorder.



- 1 **RMT-811 Wireless Remote Commander** (1)
- 2 **AC-L10A/L10B/L10C AC power adaptor** (1), **Power cord** (1) (DCR-PC100), **Mains lead** (1) (DCR-PC100E)
- 3 **NP-FM50 battery pack** (1)
- 4 **R6 (Size AA) battery for Remote Commander** (2)
- 5 **Serial port adaptor for Memory Stick** (1), **PC serial cable** (1), **AC adaptor for Serial port adaptor (AC-PW1/PT1)** (1)
- 6 **"Memory Stick"** (1)
- 7 **A/V connecting cable** (1)
- 8 **Lens cap** (1)
- 9 **21-pin adaptor** (1) DCR-PC100E: AEP, UK
- 10 **Application software: PictureGear 3.2Lite (CD ROM)** (1)
- 11 **Battery terminal cover** (1)
- 12 **Lens hood** (1)
- 13 **2-pin conversion adaptor** (1) DCR-PC100: E, HK/DCR-PC100E: E, HK
- 14 **2-pin conversion adaptor** (1) DCR-PC100: JE/DCR-PC100E: JE

• Abbreviation

AUS:	Australian model
JE:	Tourist model
CND:	Canadian model
CN:	Chinese model
HK:	Hong Kong model
KR:	Korea model

• DIFFERENCE TABLE

Model		**DCR-PC100**	**DCR-PC100E**
Color System		NTSC	PAL
Lens	Optical	10 ×	10 ×
	Digital	120 ×	120 ×, 40 × *

*: AEP, UK model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

TABLE OF CONTENTS

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS ············ 6
2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT) ············ 6

SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION ············ 7
2. SELF-DIAGNOSIS DISPLAY ············ 7
3. SERVICE MODE DISPLAY ············ 7
3-1. Display Method ············ 7
3-2. Switching of Backup No. ············ 7
3-3. End of Display ············ 7
4. SELF-DIAGNOSIS CODE TABLE ············ 8

1. GENERAL

Quick Start Guide ············ 1-1
Getting started ············ 1-1
Using this manual ············ 1-1
Checking supplied accessories ············ 1-2
Step 1 Preparing the power supply ············ 1-2
Installing the battery pack ············ 1-2
Charging the battery pack ············ 1-2
Connecting to mains ············ 1-3
Step 2 Inserting a cassette ············ 1-3
Recording –Basics ············ 1-4
Recording a picture ············ 1-4
Shooting backlit subjects (BACK LIGHT) ············ 1-6
Shooting in the dark (NightShot) ············ 1-6
Self-timer recording ············ 1-6
END SEARCH ············ 1-7
Playback –Basics ············ 1-7
Playing back a tape ············ 1-7
Viewing the recording on TV ············ 1-8
Advanced Recording Operations ············ 1-9
Photo recording on tapes ············ 1-9
Adjusting the white balance manually ············ 1-10
Using the wide mode ············ 1-10
Using the fader function ············ 1-11
Using special effects –Picture effect ············ 1-11
Using special effects –Digital effect ············ 1-12
Using the PROGRAM AE function ············ 1-12
Adjusting the exposure manually ············ 1-13
Focusing manually ············ 1-13
Advanced Playback Operations ············ 1-14
Playing back a tape with picture effects ············ 1-14
Playing back a tape with digital effects ············ 1-14
Quickly locating a scene using the zero set memory function ············ 1-14
Searching the boundaries of recorded tape by title –Title search ············ 1-15
Searching a recording by date –Date search ············ 1-15
Searching for a photo-Photo search/Photo scan ············ 1-15
Editing ············ 1-16
Dubbing a tape ············ 1-16
Editing partially on a DV tape –DV synchro-editing ············ 1-17
Recording video or TV programmes ············ 1-18
Inserting a scene from a VCR –Insert editing ············ 1-19
Audio dubbing ············ 1-20
Superimposing a title ············ 1-21
Making your own titles ············ 1-22
Labeling a cassette ············ 1-23
Customizing Your Camcorder ············ 1-23
Changing the menu settings ············ 1-23
Resetting the date and time ············ 1-25
“Memory Stick” Operations ············ 1-26
Using a “Memory Stick” –introduction ············ 1-26
Recording still images on “Memory Stick”s –Memory photo recording ············ 1-
Superimposing a still picture in a “Memory Stick” on a moving picture –MEMORY MIX ············ 1-29
Recording an image from a mini DV tape as a still image ············ 1-30
Copying still images from a mini DV tape –Photo save ············ 1-31
Viewing a still picture –Memory photo playback ············ 1-31
Copying the image recorded on “Memory Stick”s to mini DV tapes ············
Playing back images continuously –SLIDE SHOW ············ 1-33
Preventing accidental erasure –Image protection ············ 1-33
Deleting images ············
Writing a print mark –PRINT MARK ············ 1-35
Additional Information ············
Usable cassettes ············
Troubleshooting ············
Self-diagnosis display ············ 1
Warning indicators and messages ············ 1-38
Using your camcorder abroad ············ 1-3
Maintenance information and precautions ············ 1-39
Quick Reference ············
Identifying the parts and controls ············ 1-40
Quick Function Guide ············ 1

2. DISASSEMBLY

2-1. LCD UNIT, PD-125 BOARD ············ 2-2
2-2. MD BLOCK-1 ············
2-3. MR-44 BOARD, MD BLOCK-2 ············ 2-4
2-4. LENS ASSEMBLY, EVF BLOCK ASSEMBLY, CONTROL SWITCH BLOCK (ME-4950) ············ 2-5
2-5. VC-227 (VC-227P) BOARD, SPEAKER, MEMORY STICK CONNECTOR, MICROPHONE UNIT, MA-367 BOARD ············
2-6. HINGE ASSEMBLY ············
2-7. DC-IN CONNECTOR, BATTERY TERMINAL BOARD, FJ-25 BOARD ············
2-8. CCD/CD BLOCK ASSEMBLY, MF RING BLOCK ASSEMBLY ············
2-9. VF-138 BOARD, VF HOLDER ASSEMBLY, EYE CUP ASSEMBLY ············ 2
2-10. CONTROL SWITCH BLOCK (FK-4950) ············ 2-9
2-11. CIRCUIT BOARDS LOCATION ············ 2-10
2-12. FLEXIBLE BOARDS LOCATION ············ 2-11

3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM-1 ············ 3-1
OVERALL BLOCK DIAGRAM-2 ············ 3-3
OVERALL BLOCK DIAGRAM-3 ············ 3-5
3-2. POWER BLOCK DIAGRAM-1 ············ 3-7
POWER BLOCK DIAGRAM-2 ············ 3-9

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM-1 ············ 4-1
FRAME SCHEMATIC DIAGRAM-2 ············ 4-3
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS ············ 4-
- CD-234 (CCD IMAGER) PRINTED WIRING BOARD ············ 4-7
- CD-234 (CCD IMAGER) SCHEMATIC DIAGRAM ············ 4-11

Shematic diagram and printed wiring board of the VC-227 board are not shown.
Pages from 4-13 to 4-46 are not shown.

• MR-44 (CONNECTOR, DRUM/CAPSTAN MOTOR DRIVE, TIMING GENERATOR, REC/PB HEAD AMP, LASER LINK)
PRINTED WIRING BOARD ······················ 4-47
• FP-91 (MODE), FP-92 (TOP/END SENSOR, TAPE LED), FP-242 (S/T REEL SENSOR)
PRINTED WIRING BOARDS ···················· 4-49
• MR-44 (CONNECTOR)(1/5)
SCHEMATIC DIAGRAM ·························· 4-51
• MR-44 (DRUM/CAPSTAN MOTOR DRIVE)(2/5)
SCHEMATIC DIAGRAM ·························· 4-53
• MR-44 (ID DETECT, TIMING GENERATOR)(3/5)
SCHEMATIC DIAGRAM ·························· 4-55
• MR-44 (REC/PB HEAD AMP)(4/5)
SCHEMATIC DIAGRAM ·························· 4-57
• MR-44 (LASER LINK)(5/5)
SCHEMATIC DIAGRAM ·························· 4-59
• FJ-25 (VIDEO IN/OUT, DC IN)
SCHEMATIC DIAGRAM ·························· 4-61
• FJ-25 (VIDEO IN/OUT, DC IN)
PRINTED WIRING BOARD ······················ 4-63
• CONTROL SWITCH BLOCK (FK-4950)
SCHEMATIC DIAGRAM ·························· 4-67
• CONTROL SWITCH BLOCK (ME-4950)
SCHEMATIC DIAGRAM ·························· 4-69
• MA-367 (MIC AMP)
PRINTED WIRING BOARD ······················ 4-71
• MA-367 (MIC AMP)
SCHEMATIC DIAGRAM ·························· 4-73
• PD-125 (RGB DRIVER, TG)
PRINTED WIRING BOARD ······················ 4-75
• PD-125 (RGB DRIVER)(1/2)
SCHEMATIC DIAGRAM ·························· 4-77
• PD-125 (TG)(2/2)
SCHEMATIC DIAGRAM ·························· 4-79
• VF-138 (LCD DRIVER)(1/2)
SCHEMATIC DIAGRAM ·························· 4-81
• VF-138 (BACK LIGHT DRIVER)(2/2)
SCHEMATIC DIAGRAM ·························· 4-83
• VF-138 (LCD DRIVER, BACK LIGHT DRIVER)
PRINTED WIRING BOARD ······················ 4-85
4-3. WAVEFORMS ·· 4-87
4-4. MOUNTED LOCATION ····································· 4-92

5 ADJUSTMENTS

1. Before starting adjustment ································ 5-1
1-1. Adjusting items when replacing main parts and boards. · 5-2
5-1. CAMERA SECTION ADJUSTMENT ························· 5-4
1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION) ··································· 5-4
1-1-1. List of Service Tools ································ 5-4
1-1-2. Preparations ·· 5-5
1-1-3. Precaution ·· 5-7
1. Setting the Switch ·· 5-7
2. Order of Adjustments ····································· 5-7
3. Subjects ·· 5-7
1-2. INITIALIZATION OF B, C, D, E, F, 7 PAGE DATA ····· 5-8
1-2-1. INITIALIZATION OF C PAGE DATA ························ 5-8
1. Initializing the C Page Data ···························· 5-8
2. Modification of C Page Data ···························· 5-8
3. C Page Table ·· 5-8
1-2-2. INITIALIZATION OF D PAGE DATA ······················ 5-10
1. Initializing the D Page Data ···························· 5-10
2. Modification of D Page Data ···························· 5-10
3. D Page Table ·· 5-11
1-2-3. INITIALIZATION OF B PAGE DATA ······················ 5-12
1. Initializing the B Page Data ···························· 5-12
2. Modification of B Page Data ······························ 5-12
3. B Page Table ·· 5-13
1-2-4. INITIALIZATION OF E, F, 7 PAGE DATA ················ 5-13
1. Initializing the E, F, 7 Page Data ························ 5-13
2. Modification of E, F, 7 Page Data ························ 5-13
3. Modification of F Page Data ······························ 5-14
4. F Page Table ·· 5-14
5. E Page Table ·· 5-17
6. 7 Page Table ·· 5-19
1-3. CAMERA SYSTEM ADJUSTMENTS ······················ 5-21
1. 54MHz/66MHz Origin Oscillation Adjustment (CD-234 board) ··· 5-21
2. Zoom Key Center Adjustment ···························· 5-21
3. HALL Adjustment ·· 5-22
4. MR Adjustment ··· 5-22
5. Flange Back Adjustment (Using Minipattern Box) ······ 5-23
6. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away) ································ 5-24
6-1. Flange Back Adjustment (1) ······························ 5-24
6-2. Flange Back Adjustment (2) ······························ 5-24
7. Flange Back Check ·· 5-25
8. Picture Frame Setting ·· 5-25
9. Color Reproduction Adjustment ·························· 5-26
10. MAX GAIN Adjustment ······································ 5-27
11. Auto White Balance & LV Standard Data Input ·········· 5-27
12. Auto White Balance Adjustment ·························· 5-28
13. White Balance Check ·· 5-28
14. Mechanical Shutter Data Input ···························· 5-29
15. Angular Velocity Sensor Sensitivity Adjustment ········· 5-29
1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT ·· 5-30
1. VCO Adjustment (VF-138 board) ·························· 5-30
2. Bright Adjustment (VF-138 board) ························ 5-31
3. Contrast Adjustment (VF-138 board) ····················· 5-31
4. White Balance Adjustment (VF-138 board) ··············· 5-32
1-5. LCD SYSTEM ADJUSTMENT ································ 5-33
1. VCO Adjustment (PD-125 board) ·························· 5-33
2. Black Limit Adjustment (PD-125 board) ··················· 5-34
3. Bright Adjustment (PD-125 board) ························ 5-34
4. Gamma-1 Adjustment (PD-125 board) ····················· 5-35
5. Contrast Adjustment (PD-125 board) ····················· 5-35
6. Center Level Adjustment (PD-125 board) ················ 5-36
7. White Balance Adjustment (PD-125 board) ··············· 5-36
5-2. MECHANISM SECTION ADJUSTMENT ················· 5-37
2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE ··· 5-37
2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE ·· 5-37
2-3. TAPE PATH ADJUSTMENT ································· 5-37
1. Preparation for Adjustment ································ 5-37
2. Processing after Completing Operations: ················ 5-37
5-3. VIDEO SECTION ADJUSTMENT ··························· 5-38
3-1. PREPARATIONS BEFORE ADJUSTMENTS ··········· 5-38
3-1-1. Equipment to Required ····································· 5-38
3-1-2. Precautions on Adjusting ·································· 5-39
3-1-3. Adjusting Connectors ······································ 5-40
3-1-4. Connecting the Equipment ································ 5-40
3-1-5. Checking the Input Signals ································ 5-40
3-1-6. Alignment Tapes ·· 5-41
3-1-7. Input/Output Level and Impedance ······················ 5-41
3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT ········ 5-42
1. Initialization of B, C, D, E, F, 7 Page Data ·············· 5-42
2. Serial No. Input ··· 5-42
2-1. Company ID Input ·· 5-42
2-2. Serial No. Input ··· 5-42
3. Battery End Check (VC-227 board) ······················· 5-44

3-3. SERVO AND RF SYSTEM ADJUSTMENT ··· 5-45
1. Cap FG Duty Adjustment (VC-227 board) ··· 5-45
2. T reel FG Duty Adjustment (VC-227 board) ··· -5-45
3. PLL f_0 & LPF f_0 Adjustment (VC-227 board) ··· 5-45
4. Switching Position Adjustment (VC-227 board) ··· 5-46
5. AGC Center Level and APC & AEQ Adjustment ··· 5-46
5-1. Preparations before adjustments ··· 5-46
5-2. AGC Center Level Adjustment (VC-227 board) ··· 5-46
5-3. APC & AEQ Adjustment (VC-227 board) ··· 5-47
5-4. Processing after Completing Adjustments ··· 5-47
6. PLL f_0 & LPF f_0 Final Adjustment (VC-227 board) ··· 5-47
3-4. VIDEO SYSTEM ADJUSTMENTS ··· 5-48
3-4-1. Base Band Block Adjustments ··· 5-48
1. Chroma BPF f_0 Adjustment (VC-227 Board) ··· 5-48
2. S VIDEO OUT Y Level Adjustment (VC-227 Board) ··· 5-48
3. S VIDEO OUT Chroma Level Adjustment (VC-227 Board) ··· 5-49
4. AV OUT Y, Chroma Level Check (VC-227 Board) ··· 5-49
5. PLL Adjustment (VC-227 Board) ··· 5-50
3-4-2. BIST Check ··· 5-51
1. Playback System Check ··· 5-51
1-1. Preparation for Playback ··· 5-51
1-2. IC1900(TRX) BIST(PB) Check ··· 5-51
1-3. IC1601(TFD) BIST(PB) Check ··· 5-51
1-4. IC1600(SFD) BIST(PB) Check ··· 5-51
1-5. IC1501(VFD) BIST(PB) Check ··· 5-52
2. Recording System Check ··· 5-53
2-1. Preparations for recording ··· 5-53
2-2. IC1501(VFD) BIST(REC) Check ··· 5-53
2-3. IC1600(SFD) BIST(REC) Check ··· 5-53
2-4. IC1601(TFD) BIST(REC) Check ··· 5-54
2-5. IC1900(TRX) BIST(REC) Check ··· 5-54
3-5. IR TRANSMITTER ADJUSTMENTS ··· 5-55
1. IR Video Carrier Frequency Adjustment (MR-44 board) ··· 5-55
2. IR Video Deviation Adjustment (MR-44 board) ··· 5-55
3. IR Audio Deviation Adjustment (MR-44 board) ··· 5-56
3-6. AUDIO SYSTEM ADJUSTMENTS ··· 5-57
1. Playback Level Check ··· 5-58
2. Overall Level Characteristics Check ··· 5-58
3. Overall Distortion Check ··· 5-58
4. Overall Noise Level Check ··· 5-58
5. Overall Separation Check ··· 5-58
5-4. SERVICE MODE ··· 5-59
4-1. ADJUSTMENT REMOTE COMMANDER ··· 5-59
1. Using the adjustment remote commander ··· 5-59
2. Precautions upon using the adjustment remote commander ··· 5-59
4-2. DATA PROCESS ··· 5-60
4-3. SERVICE MODE ··· 5-61
1. Setting the Test Mode ··· 5-61
2. Emergence Memory Address ··· 5-61
2-1. EMG Code (Emergency Code) ··· 5-61
2-2. MSW Code ··· 5-62
3. Bit value discrimination ··· 5-63
4. Switch check (1) ··· 5-63
5. Switch check (2) ··· 5-64
6. Record of Use check ··· 5-64

6. REPAIR PARTS LIST

6-1. EXPLODED VIEWS ··· 6-1
6-1-1. CABINET (R) SECTION-1 ··· 6-1
6-1-2. CABINET (R) SECTION-2 ··· 6-2
6-1-3. CABINET (R) SECTION-3 ··· 6-3
6-1-4. CABINET (L) BLOCK ASSEMBLY ··· 6-4
6-1-5. LENS ASSEMBLY, EVF BLOCK ASSEMBLY ··· 6-5
6-1-6. CASSETTE COMPARTMENT AND DRUM ASSY SECTION ···
6-1-7. LS CHASSIS SECTION ··· 6
6-1-8. MECHANISM CHASSIS BLOCK SECTION-1 ··· 6-8
6-1-9. MECHANISM CHASSIS BLOCK SECTION-2 ··· 6-9
6-2. ELECTRICAL PARTS LIST ··· 6-10

Parts list of the VC-227 board is not shown.
Pages from 6-18 to 6-25 are not shown.

* Parts reference sheet and color reproduction frame are shown on page 226 and 227.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

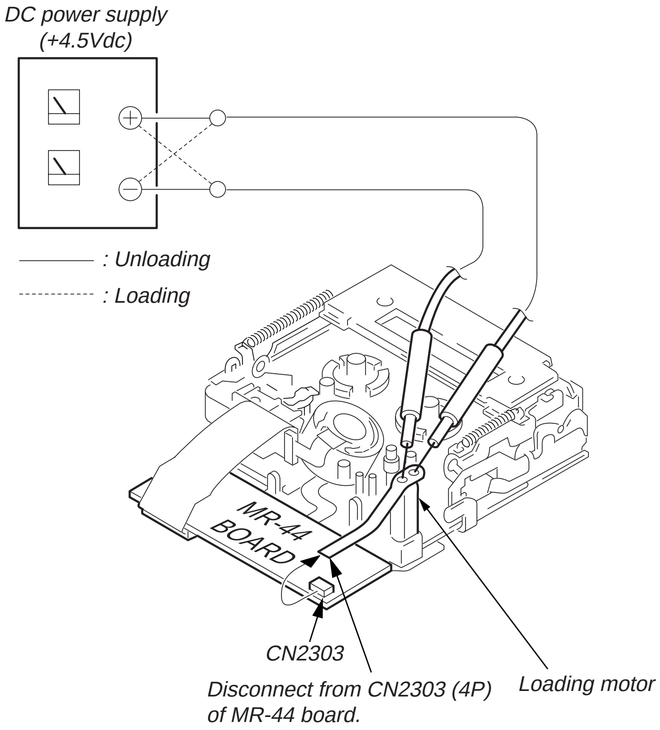
In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4 V), the power is shut off so that the unit cannot operate.
This following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the “ADJ” side.

Method 2.
Use the DC IN terminal. (Use the AC power adaptor (AC-L10, AC-VQ800 etc.))

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-2 to remove the shoe cover.
② Refer to 2-3. to remove the cabinet (L) assembly.
③ Refer to 2-3. to remove the mechanism deck.
④ Disconnect from CN2303 (4P, 0.8mm) of MR-44 board.
⑤ Add +4.5 V from the DC POWER SUPPLY and unload with a pressing the cassette compartment.


DC power supply
(+4.5Vdc)
: Unloading
: Loading
MR-44 BOARD
CN2303
Disconnect from CN2303 (4P) of MR-44 board.
Loading motor

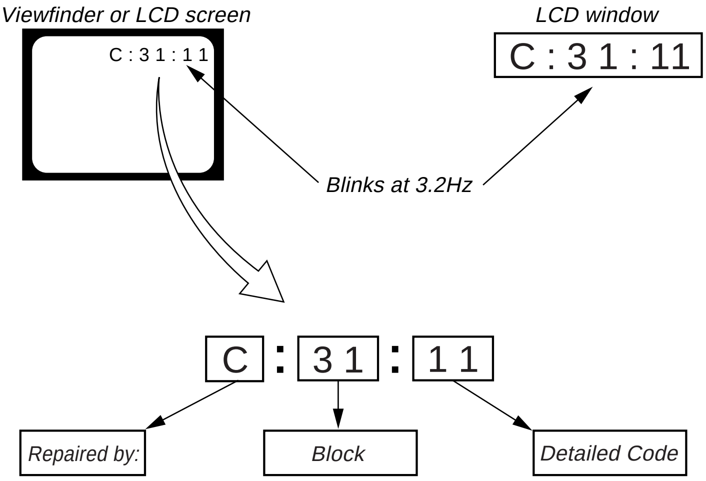
SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder, LCD screen or LCD window what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

2. SELF-DIAGNOSIS DISPLAY

When problems occur while the unit is operating, the counter of the viewfinder, LCD screen or LCD window consists of an alphabet and 4-digit numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.



C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer

Indicates the appropriate step to be taken.
E.g.
31 ....Reload the tape.
32 ....Turn on power again.

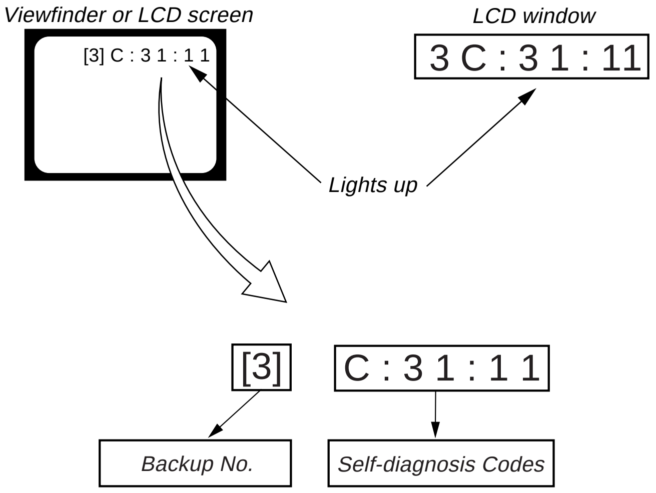
Refer to page 8.
Self-diagnosis Code Table.

3. SERVICE MODE DISPLAY

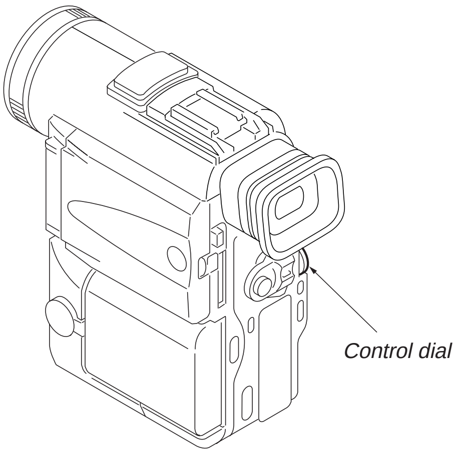
The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the “STOP” key, set the switch from OFF to “VTR”, and continue pressing the “STOP” key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



Order of previous errors



3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time
[2] : Occurred second time
[3] : Occurred third time
[4] : Occurred fourth time
[5] : Occurred fifth time
[6] : Occurred the last time

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The “self-diagnosis display” data will be backed up by the coin-type lithium battery (BT1050) of the control switch block (FK-4950). When the control switch block is removed, the “self-diagnosis display” data will be lost by initialization.

4. SELF-DIAGNOSIS CODE TABLE

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
C	0 4	0 0	Non-standard battery is used.	Use the info LITHIUM battery.
C	2 1	0 0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2 2	0 0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3 1	1 0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	2 0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3 1	2 1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3 1	2 2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	3 0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3 1	4 0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3 1	4 2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 1	1 0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	3 0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus MR sensor (Pin ㉔,㉕ of CN171 of CD-234 board) when focusing is performed when the control dial is rotated in the focus manual mode, and the focus motor drive circuit (IC401 of VC-227 board) when the focusing is not performed.
E	6 1	1 0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom MR sensor (Pin ②,③ of CN171 of CD-234 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC401 of VC-227 board) when zooming is not performed.
E	6 2	0 0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE451 of MA-367 board) peripheral circuits.
E	6 2	0 1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE450 of MA-367 board) peripheral circuits.

SECTION 1
GENERAL

This section is extracted from instruction manual. (DCR-PC100E model)

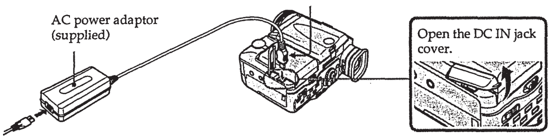
English

Quick Start Guide

This chapter introduces you to the basic features of your camcorder. See the page in parentheses "( )" for more information.

1 Connecting the mains lead (p. 18)

Use the battery pack when using your camcorder outdoors (p. 14).



Connect the plug with its ▲ mark facing up.

AC power adaptor (supplied)

Open the DC IN jack cover.

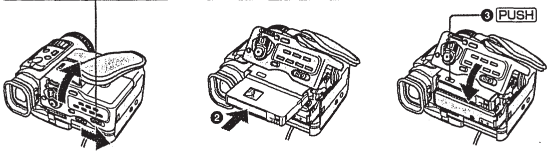
2 Inserting a cassette (p. 19)

❶ Slide OPEN/⏏EJECT in the direction of the arrow and open the lid.

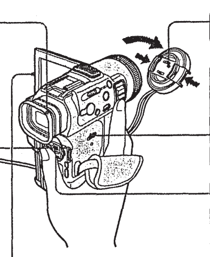
❷ Push the middle portion of the back of the cassette to insert. Insert the cassette in a straight line deeply into the cassette compartment with the window facing out.

❸ Close the cassette compartment by pressing the PUSH mark on the cassette compartment.

❹ After the cassette compartment going down completely, close the lid until it clicks.



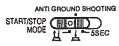
3 Recording a picture (p. 20)



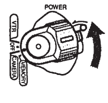
Viewfinder
When the LCD panel is closed, use the viewfinder placing your eye against its eyecup.

❶ Remove the lens cap.

❷ Set the START/STOP MODE switch to ♖.

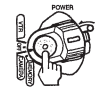


❸ Set the POWER switch to CAMERA while pressing the small green button.



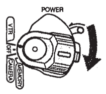
❹ Press OPEN to open the LCD panel.

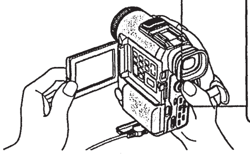
❺ Press START/STOP. Your camcorder starts recording. To stop recording, press START/STOP again.



4 Monitoring the playback picture on the LCD screen (p. 33)

❶ Set the POWER switch to VTR while pressing the small green button.





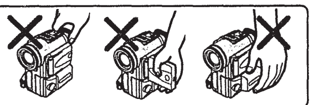
❷ Press ◀◀ to rewind the tape.

REW ◀◀

❸ Press ▶ to start playback.

PLAY ▷

NOTE
Do not pick up your camcorder by holding the viewfinder, the LCD panel or the battery pack.



— Getting started —

Using this manual

As you read through this manual, buttons and settings on your camcorder are shown in capital letters.

e.g. Set the POWER switch to CAMERA.

When you carry out an operation, you can hear a beep or a melody sound to indicate that the operation is being carried out.

Note on Cassette Memory

Your camcorder is based on the DV format. You can only use mini DV cassettes with your camcorder. We recommend that you use a tape with cassette memory CM.

The functions which require different operations depending on whether the tape has the cassette memory or not are:
- End search (p. 32, 37)
- Searching a recording by date – date search (p. 65)
- Photo search (p. 67).

The functions you can operate only with the cassette memory are:
- Searching the boundaries of recorded tape by title – title search (p. 64)
- Superimposing a title (p. 89)
- Making your own titles (p. 94)
- Labelling a cassette (p. 96).

For details, see page 154.

CM only You see this mark in the introduction of the features that are operated only with cassette memory.
Tapes with cassette memory are marked by CM (Cassette Memory).

Note on TV colour systems

TV colour systems differ from country to country. To view your recordings on a TV, you need a PAL system-based TV.

– Подготовка к эксплуатации –

Использование данного руководства

При чтении данного руководства учитывайте, что кнопки и установки на видеокамере показаны заглавными буквами.

Пример. Установите переключатель POWER в положение CAMERA.

При выполнении операции на видеокамере можно услышать звуковой сигнал или мелодию, подтверждающие выполнение операции.

Кассетная память

Ваша видеокамера основана на формате DV. Поэтому в ней можно использовать только кассеты мини DV. Рекомендуется использовать ленту с кассетной памятью CM.

Ниже перечислены функции, которые требуют выполнения различных операций, в зависимости от того, имеется на ленте кассетная память или нет:
- Поиск конца (стр. 32, 37)
- Поиск записи по дате – Поиск даты (стр. 65)
- Фотопоиск (стр. 67).

Функции, которыми можно управлять только с помощью кассетной памяти, следующие:
- Поиск границ записи на ленте по титру – Поиск титра (стр. 64)
- Наложение титра (стр. 89)
- Создание собственных титров (стр. 94)
- Маркировка кассеты (стр. 96).

Подробные сведения см. на стр. 154.

CM only Этот знак можно увидеть при описании функций, которые управляются только с помощью кассетной памяти.
Ленты с кассетной памятью маркируются знаком CM (кассетная память).

Примечание по системам цветного телевидения

Системы цветного телевидения отличаются в зависимости от страны. Для просмотра Ваших записей на экране телевизора необходимо использовать телевизор на базе системы PAL.

Using this manual

Copyright precautions

Television programmes, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Precautions on camcorder care

- **The LCD screen and/or the colour viewfinder are manufactured using high-precision technology. However, there may be some tiny black spots and/or bright spots (red, blue or green in colour) that constantly appear on the LCD screen and/or in the colour viewfinder. These spots occur normally in the manufacturing process and do not affect the recorded picture in any way. Effective number of pixels is 99.99% or more.**
- Do not let your camcorder get wet. Keep your camcorder away from rain and sea water. Letting your camcorder get wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired **[a]**.
- Never leave your camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Do not place your camcorder so as to point the viewfinder or the LCD screen toward the sun. The inside of the viewfinder or LCD screen may be damaged **[c]**.

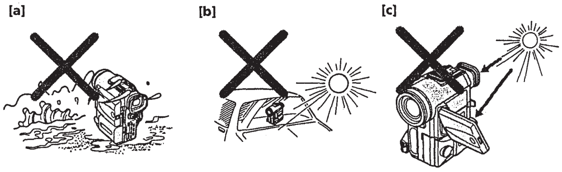
Использование данного руководства

Предостережение об авторском праве

Телевизионные программы, кинофильмы, видеоленты и другие материалы могут быть защищены авторским правом. Нелицензированная запись таких материалов может противоречить положениям закона об авторском праве.

Меры предосторожности при уходе за видеокамерой

- **Экран ЖКД и/или цветной видоискатель изготовлены с помощью высокоточной технологии. Однако на экране ЖКД и/или в цветном видоискателе могут появляться черные или яркие точки (красные, синие или зеленые). Появление этих точек обычно связано с производственным процессом, и они абсолютно не влияют на записываемое изображение. Рабочее количество пикселов составляет 99.99% или более.**
- Не допускайте появления влаги снаружи и внутри видеокамеры. Предохраняйте видеокамеру от дождя и морской воды. Влага может привести к неполадкам в работе видеокамеры. Иногда неисправность устранить невозможно **[a]**.
- Никогда не оставляйте видеокамеру в местах, где температура поднимается выше 60°C (140°F), например, в автомобиле, припаркованном в солнечном месте, или под прямым солнечным светом **[b]**.
- Не допускайте попадания прямых солнечных лучей на видоискатель или экран ЖКД. Иначе могут возникнуть повреждения внутреннего устройства видоискателя или экрана ЖКД **[c]**.



[a] [b] [c]

Using this manual

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, video tape, etc.

Использование данного руководства

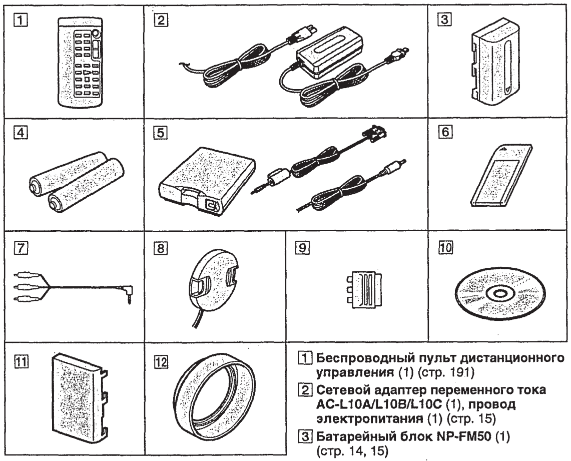
Содержимое записанного материала невозможно восстановить, если запись или воспроизведение не получились по причине неисправности видеокамеры, видеоленты и т.п.

Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.

Проверка прилагаемых принадлежностей

Убедитесь, что следующие принадлежности входят в комплект Вашей видеокамеры.



1. **Wireless Remote Commander** (1) (p. 191)
2. **AC-L10A/L10B/L10C AC power adaptor** (1), **Mains lead** (1) (p. 15)
3. **NP-FM50 battery pack** (1) (p. 14, 15)
4. **R6 (size AA) battery for Remote Commander** (2) (p. 192)
5. **Serial port adaptor for Memory Stick** (1), **PC serial cable** (1), **AC adaptor for Serial port adaptor** (1) (p. 141)
6. **"Memory Stick"** (1) (p. 115)
7. **A/V connecting cable** (1) (p. 38, 70)
8. **Lens cap** (1) (p. 20)
9. **21-pin adaptor** (1) (p. 39)
10. **Application software: PictureGear 3.2Lite (CD ROM)** (1) (p. 141)
11. **Battery terminal cover** (1) (p. 14)
12. **Lens hood** (1) (p. 24)

1. **Беспроводный пульт дистанционного управления** (1) (стр. 191)
2. **Сетевой адаптер переменного тока AC-L10A/L10B/L10C** (1), **провод электропитания** (1) (стр. 15)
3. **Батарейный блок NP-FM50** (1) (стр. 14, 15)
4. **Батарейка R6 (размера АА) для пульта дистанционного управления** (2) (стр. 192)
5. **Адаптер последовательного порта для Memory Stick** (1), **PC-кабель последовательного соединения** (1), **сетевой адаптер переменного тока для адаптера последовательного порта** (1) (стр. 141)
6. **"Memory Stick"** (1) (стр. 115)
7. **Соединительный кабель аудио/видео** (1) (стр. 38, 70)
8. **Крышка объектива** (1) (стр. 20)
9. **21-штырьковый адаптер** (1) (стр. 39)
10. **Прикладное программное обеспечение: PictureGear 3.2Lite (компакт-диск)** (1) (стр. 141)
11. **Крышка батарейного отсека** (1) (стр. 14)
12. **Бленда объектива** (1) (стр. 24)

Step 1 Preparing the power supply

Installing the battery pack

Install the battery pack to use your camcorder outdoors.

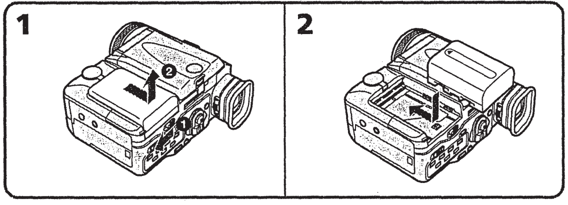
(1) While sliding BATT RELEASE in the direction of the arrow ❶, slide the battery terminal cover in the direction of the arrow ❷.
(2) Insert the battery pack in the direction of the arrow.

Пункт 1 Подготовка источника питания

Установка батарейного блока

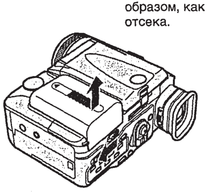
Установите батарейный блок, чтобы использовать видеокамеру вне помещения.

(1) Переместив рычажок BATT RELEASE в направлении стрелки ❶, выдвигайте крышку батарейного отсека в направлении стрелки ❷.
(2) Вставьте батарейный блок в направлении стрелки.



To remove the battery pack
The battery pack is removed in the same way as the battery terminal cover.

Для снятия батарейного блока
Батарейный блок извлекается таким же образом, как и крышка батарейного отсека.



Note on the remaining battery time indicator
The remaining battery time indicator on the LCD screen or in the viewfinder roughly indicates the recording time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time in minutes to be displayed.

Индикатор оставшегося времени работы батареи
Индикатор оставшегося времени работы батареи на экране ЖКД или в видоискателе приблизительно показывает время записи. Индикация может быть не совсем точной, в зависимости от условий, в которых производится запись. Если закрыть панель ЖКД и открыть ее снова, то приблизительно через минуту появится индикация, отображающая точное оставшееся время работы батареи в минутах.

Step 1 Preparing the power supply

Note on the battery terminal cover
To protect the battery terminals, install the battery terminal cover after the battery pack is removed.

Charging the battery pack

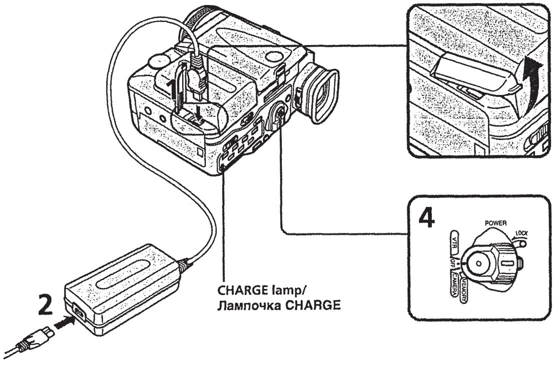
Use the battery pack after charging it for your camcorder.
Your camcorder operates only with the "InfoLITHIUM" battery pack (M series).
(1) Open the DC IN jack cover and connect the AC power adaptor supplied with your camcorder to the DC IN jack with the plug's ▲ mark facing up.
(2) Connect the mains lead to the AC power adaptor.
(3) Connect the mains lead to mains.
(4) Set the POWER switch to OFF. The CHARGE lamp (orange) lights up. Charging begins.
When the CHARGE lamp goes out, **normal charge** is completed. For **full charge**, which allows you to use the battery longer than usual, leave the battery pack in place for approximately one hour after the CHARGE lamp goes out.

Пункт 1 Подготовка источника питания

Крышка батарейного отсека
Для защиты контактов батарей установите крышку батарейного отсека после извлечения батарейного блока.

Зарядка батарейного блока

После зарядки батарейного блока его можно использовать в видеокамере.
Ваша видеокамера работает только с батарейным блоком "InfoLITHIUM" (серии M).
(1) Откройте крышку гнезда DC IN и подсоедините сетевой адаптер переменного тока, прилагаемый к видеокамере, к гнезду DC IN, так чтобы знак ▲ на штекере был обращен вверх.
(2) Подсоедините провод электропитания к адаптеру переменного токаАдаптер.
(3) Подсоедините провод электропитания к сетевой розетке.
(4) Установите переключатель POWER в положение OFF (выкл). Загорится лампочка CHARGE (оранжевым светом). Начнется зарядка.
Когда лампочка CHARGE погаснет, **обычная зарядка** завершена. Для **полной зарядки**, которая дает возможность использовать батарею дольше обычного, оставьте батарейный блок на своем месте примерно на час, после того как погаснет лампочка CHARGE.



Step 1 Preparing the power supply

Пункт 1 Подготовка источника питания

Note
Prevent metallic objects from coming into contact with the metal parts of the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.

ПРИМЕЧАНИЕ
Не допускайте контакта металлических предметов с металлическими частями штекера постоянного тока сетевого адаптера. Это может привести к короткому замыканию и повреждению адаптера переменного тока.

Charging time/Время зарядки

Battery pack/ Батарейный блок	Full charge (Normal charge)/ Полная зарядка (нормальная зарядка)
NP-FM50 (supplied)/ (прилагается)	150 (90)
NP-FM70	240 (180)
NP-FM90	330 (270)

Approximate minutes to charge an empty battery pack

Приблизительное время в минутах для зарядки полностью разряженного батарейного блока

Recording time/Время записи

Battery pack/ Батарейный блок	Recording with the viewfinder/ Запись с помощью видоискателя		Recording with the LCD screen/ Запись с помощью экрана ЖКД	
	Continuous*/ Непрерывная*	Typical**/ Типичная**	Continuous*/ Непрерывная*	Typical**/ Типичная**
NP-FM50 (supplied)/ (прилагается)	135 (120)	80 (70)	115 (105)	65 (60)
NP-FM70	275 (250)	160 (145)	245 (220)	145 (130)
NP-FM90	425 (380)	250 (225)	370 (335)	220 (195)

Approximate minutes when you use a fully charged battery

Numbers in parentheses "( )" indicate the time using a normally charged battery.

* Approximate continuous recording time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.

** Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Приблизительное время в минутах при использовании полностью заряженного батарейного блока

Числовые значения в скобках "( )" указывают время при использовании батарейного блока с нормальной зарядкой.

* Приблизительное время непрерывной записи при температуре 25°C (77°F). Срок службы батарейного блока будет короче, если видеокамера используется в холодных условиях.

** Приблизительное время в минутах при записи с неоднократным пуском/остановкой, увеличением изображения и включением/выключением питания. Фактический срок службы заряда батарейного блока может быть короче.

Playing time/Время воспроизведения

Battery pack/ Батарейный блок	Playing time on LCD screen/ Время воспроизведения на экране ЖКД	Playing time with LCD closed/ Время воспроизведения при закрытом ЖКД
NP-FM50 (supplied)/ (прилагается)	135 (120)	160 (145)
NP-FM70	275 (250)	335 (300)
NP-FM90	425 (380)	505 (455)

Approximate minutes when you use a fully charged battery

Numbers in parentheses "( )" indicate the time using a normally charged battery.
The battery life will be shorter if you use your camcorder in a cold environment.

After charging the battery pack
Disconnect the AC power adaptor from the DC IN jack on your camcorder.

What is "InfoLITHIUM"?
The "InfoLITHIUM" is a lithium ion battery pack which can exchange data with compatible electronic equipment about its battery consumption. Sony recommends that you use the "InfoLITHIUM" battery pack with electronic equipment having the ⓘ InfoLITHIUM mark.

Приблизительное время в минутах при использовании полностью заряженного батарейного блока

Числовые значения в скобках "( )" указывают время при использовании батарейного блока с нормальной зарядкой. Срок службы батарейного блока будет короче, если видеокамера используется в холодных условиях.

После зарядки батарейного блока
Отсоедините сетевой адаптер переменного тока от гнезда DC IN на видеокамере.

Что такое "InfoLITHIUM"?
"InfoLITHIUM" представляет собой литиево-ионный батарейный блок, который может обмениваться данными, такими как потребление заряда батарейного блока, с совместимой видеоаппаратурой. Корпорация Sony рекомендует использовать в электронном оборудовании батарейный блок "InfoLITHIUM", на котором присутствует знак ⓘ InfoLITHIUM.

Connecting to mains

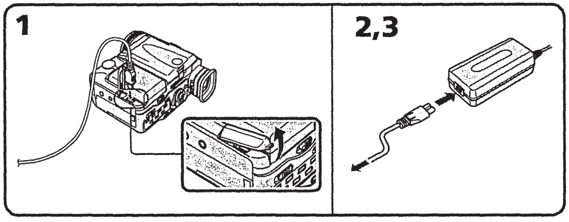
When you use your camcorder for a long time, we recommend that you power it from mains using the AC power adaptor.

(1) Open the DC IN jack cover, pulling the cover out a little. Connect the AC power adaptor to the DC IN jack on your camcorder with the plug's ▲ mark facing up.
(2) Connect the mains lead to the AC power adaptor.
(3) Connect the mains lead to mains.

Подсоединение к сетевой розетке

При длительном использовании видеокамеры рекомендуется использовать питание от электрической сети с помощью сетевого адаптера переменного тока.

(1) Откройте крышку гнезда DC IN, слегка потянув ее наружу. Подсоедините сетевой адаптер переменного тока к гнезду DC IN на видеокамере, так чтобы знак ▲ на штекере был обращен вверх.
(2) Подсоедините провод электропитания к адаптеру переменного тока.
(3) Подсоедините провод электропитания к сетевой розетке.



Notes
- The mains lead must only be changed at an authorized service shop.
- The set is not disconnected from the AC power source (the mains) as long as it is connected to mains, even if the set itself has been turned off.
- AC power adaptor can supply power even if the battery pack is attached to your camcorder.
- The DC IN jack has "source priority." This means that the battery pack cannot supply any power if the mains lead is connected to the DC IN jack, even when the mains lead is not plugged into mains.

Using a car battery
Use Sony DC Adaptor/Charger (not supplied).

Примечания
- Провод электропитания следует заменять только в той мастерской, у которой имеется разрешение.
- Аппарат не отключается от источника питания переменного тока, пока он подсоединен к электрической сети, даже если сам аппарат выключен.
- Питание от сетевого адаптера переменного тока может подаваться даже в том случае, когда батарейный блок присоединен к видеокамере.
- Гнездо DC IN обладает "приоритетом источника". Это означает, что питание от батарейного блока не подается, пока провод электропитания подсоединен к гнезду DC IN, даже если провод электропитания не включен в сетевую розетку.

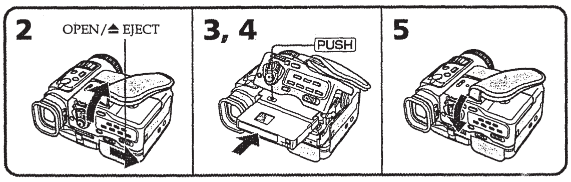
Использование автомобильного аккумулятора
Используйте адаптер/зарядное устройство постоянного тока фирмы Sony (не входит в комплект).

Step 2 Inserting a cassette

Пункт 2 Установка кассеты

(1) Install the power source.
(2) Slide OPEN/≜EJECT in the direction of the arrow and open the lid. The cassette compartment automatically lifts up and opens.
(3) Push the middle portion of the back of the cassette to insert.
Insert the cassette in a straight line deeply into the cassette compartment with the window facing out.
(4) Close the cassette compartment by pressing the PUSH mark on the cassette compartment. The cassette compartment automatically goes down.
(5) After the cassette compartment going down completely, close the lid until it clicks.

(1) Установите источник питания.
(2) Передвиньте переключатель OPEN/≜EJECT в направлении стрелки и откройте крышку. Кассетный отсек автоматически поднимется вверх и откроется.
(3) Нажмите посредине задней стороны кассеты для ее установки. Вставьте кассету по прямой линии глубоко в кассетный отсек прозрачной стороной наружу.
(4) Закройте кассетный отсек, нажав метку PUSH на кассетном отсеке. Кассетный отсек автоматически опустится вниз.
(5) После того, как кассетный отсек полностью опустится вниз, закройте крышку так, чтобы она защелкнулась.



To eject a cassette
Follow the procedure above, and take out the cassette in step 3.

Notes
- Do not press the cassette compartment down firmly. Doing so may cause malfunction.
- The cassette compartment may not be closed when you press any part of the lid other than the PUSH mark.

When you use mini DV cassette with cassette memory
Read the instruction about cassette memory to use this function properly (p. 154).

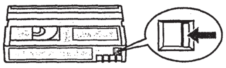
To prevent accidental erasure
Slide the write-protect tab on the cassette to expose the red mark.

Для извлечения кассеты
Выполните указанную выше процедуру и выньте кассету в пункте 3.

Примечания
- Не следует сильно нажимать кассетный отсек вниз. Это может привести к неисправности.
- Кассетный отсек может не закрыться, если Вы нажмете какую-либо другую часть на крышке, а не метку PUSH.

При использовании кассеты мини DV с кассетной памятью
Прочтите инструкцию о кассетной памяти для правильного использования этой функции (стр. 154).

Для предотвращения случайного стирания
Передвиньте лепесток защиты записи на кассете, чтобы появилась красная метка.



Recording a picture

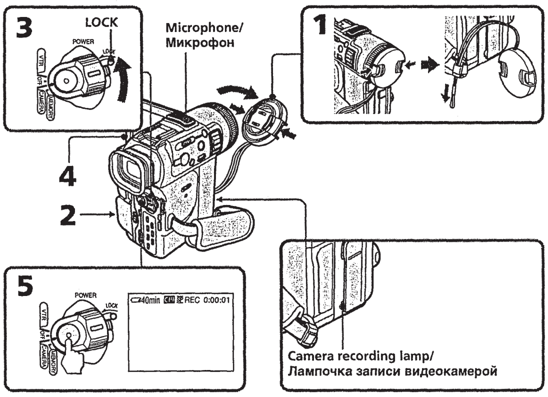
Your camcorder automatically focuses for you.

(1) Remove the lens cap and pull the lens cap string to fix it.
(2) Install the power source and insert a cassette. See "Step 1" and "Step 2" for more information (p. 14 to p. 19).
(3) Set the POWER switch to CAMERA while pressing the small green button. Your camcorder is set to the standby mode.
(4) Press OPEN to open the LCD panel.
(5) Press START/STOP. Your camcorder starts recording. The "REC" indicator appears. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START/STOP again.

Запись изображения

Ваша видеокамера автоматически выполняет фокусировку за Вас.

(1) Снимите крышку объектива и потяните за шнур крышки объектива для закрепления.
(2) Установите источник питания и вставьте кассету. См. "Пункт 1" и "Пункт 2" для получения подробных сведений (стр. 14 – 19).
(3) Установите переключатель POWER в положение CAMERA, нажав маленькую зеленую кнопку. Видеокамера будет установлена в режим ожидания.
(4) Нажмите OPEN, чтобы открыть панель ЖКД.
(5) Нажмите кнопку START/STOP. Видеокамера начнет запись. Появится индикатор "REC". Загорится также лампочка записи, расположенная на передней панели видеокамеры. Для остановки записи нажмите кнопку START/STOP еще раз.



Recording a picture

Note
Fasten the grip strap firmly. Do not touch the built-in microphone during recording.

Note on Recording mode
Your camcorder records and plays back in the SP (standard play) mode and in the LP (long play) mode. Select SP or LP in the menu settings. In the LP mode, you can record 1.5 times as long as in the SP mode.
When you record a tape in the LP mode on your camcorder, we recommend playing the tape on your camcorder.

Note on the LOCK switch
When you slide the LOCK switch to the left, the POWER switch can no longer be set to MEMORY accidentally. The LOCK switch is set to the right as a default setting.

To enable smooth transition
Transition between the last scene you recorded and the next scene is smooth as long as you do not eject the cassette even if you turn off your camcorder.
However, check the following:
- When you change the battery pack, set the POWER switch to OFF.
- Do not mix recordings in the SP mode and ones in the LP mode on one tape.

When you use a tape with cassette memory, however, you can make the transition smooth even after ejecting the cassette if you use the END SEARCH function (p. 32).

If you leave your camcorder in the standby mode for five minutes while the cassette is inserted
Your camcorder automatically turns off. This is to save battery power and to prevent battery and tape wear. To resume the standby mode, set the POWER switch to OFF, and to CAMERA again.

Запись изображения

ПРИМЕЧАНИЕ
Плотно пристегните ремень для захвата видеокамеры. Не прикасайтесь к встроенному микрофону во время записи.

Режим записи
Ваша видеокамера выполняет запись и воспроизведение в режиме SP (стандартное воспроизведение) и в режиме LP (долгоиграющее воспроизведение). Выберите параметр SP или LP в установках меню. В режиме LP можно производить запись в 1,5 раза дольше, чем в режиме SP.
При выполнении Вашей видеокамерой записи на ленту в режиме LP рекомендуется воспроизводить данную ленту на этой же видеокамере.

Переключатель LOCK
Если передвинуть переключатель LOCK влево, переключатель POWER уже невозможно случайно установить в положение MEMORY. Переключатель LOCK на предприятии-изготовителе устанавливается в правое положение (установка по умолчанию).

Для обеспечения плавного перехода
Переход между последним записанным эпизодом и следующим эпизодом будет плавным, пока не будет извлечена кассета, даже если видеокамеру отключить.
Однако необходимо отметить следующее:
- При замене батарейного блока установите переключатель POWER в положение OFF (выкл).
- Не следует на одной ленте делать записи в режиме SP и LP.

Однако при использовании ленты с кассетной памятью можно создавать плавный переход даже после извлечения кассеты, если используется функция END SEARCH (стр. 32).

Если видеокамера со вставленной кассетой оставляется в режиме ожидания на пять минут
Видеокамера выключится автоматически. Благодаря этому экономится заряд батареи, а также предотвращается износ батарейного блока и ленты. Для возобновления режима ожидания установите переключатель POWER в положение OFF, а затем снова в положение CAMERA.

Recording a picture

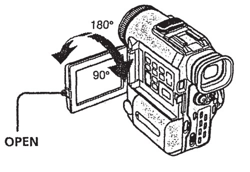
Adjusting the LCD screen

The LCD panel rotates about 90 degrees to the viewfinder side and about 180 degrees to the lens side.
If you turn the LCD panel over so that it faces the other way, the ☺ indicator appears on the LCD screen and in the viewfinder **(Mirror mode)**.

Запись изображения

Регулировка экрана ЖКД

Панель ЖКД может передвигаться примерно на 90 градусов в сторону видоискателя и примерно на 180 градусов в сторону объектива.
Если Вы повернете панель ЖКД так, что она будет направлена в другую сторону, на экране ЖКД и в видоискателе появится индикатор ☺ **(Зеркальный режим).**



To close the LCD panel, set it vertically until it clicks, and swing it into the camcorder body.

Note
When using the LCD screen except in the mirror mode, the viewfinder automatically turns off.

When you use the LCD screen outdoors in direct sunlight
The LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

When you adjust angles of the LCD panel
Make sure if the LCD panel is opened up to 90 degrees.

Picture in the mirror mode
The picture on the LCD screen is a mirror-image. However, the picture will be normal when recorded.

During recording in the mirror mode
ZERO SET MEMORY on the Remote Commander does not work.

Indicators in the mirror mode
The STBY indicator appears as **II●** and REC as ●. Some of the other indicators appear mirror-reversed and others are not displayed.

Чтобы закрыть панель ЖКД, установите ее вертикально, пока не раздастся щелчок, а затем присоедините ее к корпусу видеокамеры.

ПРИМЕЧАНИЕ
При использовании экрана ЖКД, за исключением зеркального режима, видоискатель автоматически выключается.

Если экран ЖКД используется вне помещения под прямым солнечным светом
Возможно, экран ЖКД будет трудно разглядеть. В этом случае рекомендуется использовать видоискатель.

При настройке углов панели ЖКД
Убедитесь, что панель ЖКД открыта на 90 градусов.

Изображение в зеркальном режиме
Изображение на экране ЖКД будет отображаться зеркально. Однако запись изображения будет нормальной.

Во время записи в зеркальном режиме
Кнопка ZERO SET MEMORY на пульте дистанционного управления не работает.

Индикаторы в зеркальном режиме
Индикатор STBY появится в виде **II●**, а индикатор REC в виде ●. Некоторые другие индикаторы появятся в зеркально отображенном виде, а остальные не будут отображаться совсем.

Recording a picture

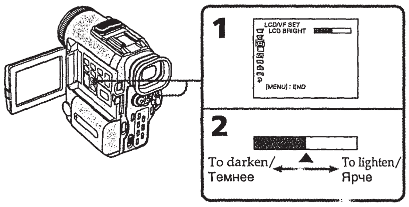
Adjusting the brightness of the LCD screen

(1) In the standby/recording mode, select LCD BRIGHT in ▣ in the menu settings. The bar indicator appears.
(2) Turn the SEL/PUSH EXEC dial to adjust the brightness of the LCD screen, then press the dial.

Запись изображения

Регулировка яркости экрана ЖКД

(1) В режиме ожидания/записи выберите позицию LCD BRIGHT в ▣ в установках меню. Появится полоса индикатора.
(2) Поверните диск SEL/PUSH EXEC для регулировки яркости экрана ЖКД, затем нажмите на диск.



LCD screen backlight
You can change the brightness of the backlight. Select LCD B.L. in the menu settings (p. 98).

Even if you adjust the LCD screen backlight or brightness of the LCD screen
The recorded picture will not be affected.

After recording

(1) Set the POWER switch to OFF.
(2) Close the LCD panel.
(3) Eject the cassette.
(4) Remove the battery pack.
(5) Attach the battery terminal cover.

Задняя подсветка экрана ЖКД
Можно изменять яркость задней подсветки. Выберите команду LCD B.L. в установках меню (стр. 98).

Даже в случае регулировки задней подсветки или яркости экрана ЖКД
Это не повлияет на записываемое изображение.

После записи

(1) Установите переключатель POWER в положение OFF (выкл).
(2) Закройте панель ЖКД.
(3) Извлеките кассету.
(4) Отсоедините батарейный блок.
(5) Присоедините крышку батарейного отсека.

Adjusting the viewfinder

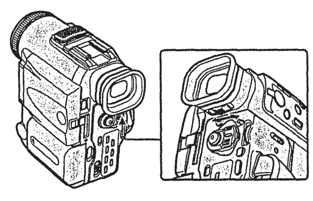
If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the indicators in the viewfinder come into sharp focus.

Move the viewfinder lens adjustment lever.

Регулировка видоискателя

Если производится запись изображения при закрытой панели ЖКД, проверьте изображение с помощью видоискателя. Отрегулируйте объектив видоискателя в соответствии со своим зрением, так чтобы индикаторы в видоискателе были четко сфокусированы.

Передвиньте рычажок регулировки объектива видоискателя.

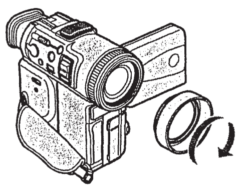


Attaching the supplied lens hood

To record fine pictures under strong light, we recommend you to attach the lens hood. You can also attach the lens cap when using the lens hood.

Присоединение прилагаемой бленды объектива

Для записи деталей изображения при ярком освещении рекомендуется устанавливать на объектив бленду. При использовании бленды также можно пользоваться крышкой объектива.



Detach the lens hood when:
- You cannot shoot with the Remote Commander. In this case, the lens hood may block the infrared ray emitted from the Remote Commander.
- You will attach a filter (not supplied).

When you attach a filter (not supplied)
The four corners of the screen may be eclipsed by the lens hood.

Using the zoom feature

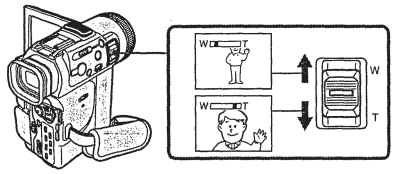
Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom.
Using the zoom function sparingly results in better-looking recordings.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)

Отсоединяйте бленду, когда:
- Вы не можете снимать с помощью пульта дистанционного управления. В этом случае, бленда может препятствовать прохождению инфракрасного луча, излучаемого с пульта дистанционного управления.
- Вы подсоедините фильтр (не входит в комплект).

При подсоединении фильтра (не входит в комплект)
Все углы экрана могут быть затемнены блендой.

Использование функции наезда видеокамеры

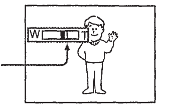
Слегка передвиньте рычаг приводного вариообъектива для медленного наезда видеокамеры. Передвиньте его дальше для ускоренного наезда видеокамеры.
При использовании функции наезда видеокамеры с небольшим масштабом записи получаются более качественными.
Сторона "T" : для телефото (объект приближается)
Сторона "W": для широкоугольного вида (объект удаляется)



Zoom greater than 10× is performed digitally, if you set D ZOOM to ON in the menu settings. The digital zoom function is set to OFF as a default setting (p. 98).

Наезд видеокамеры более 10× выполняется цифровым методом, если установить параметр D ZOOM в положение ON (вкл) в установках меню. Функция цифровой трансфокации на предприятии-изготовителе устанавливается в положение OFF (выкл), являющееся установкой по умолчанию (стр. 98).

The right-ended portion of the bar shows the digital zooming zone.
The digital zooming zone appears when you set D ZOOM to ON./
Правая сторона полосы на экране показывает зону цифровой трансфокации. Зона цифровой трансфокации появляется, когда параметр D ZOOM устанавливается в положение ON.



When you shoot close to a subject
If you cannot get a sharp focus, move the power zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

Notes on digital zoom
- Digital zoom starts to function when zoom exceeds 10×.
- The picture quality deteriorates as you move the power zoom lever toward the "T" side.
- You cannot use the digital zoom when the POWER switch is set to MEMORY.

START/STOP MODE setting

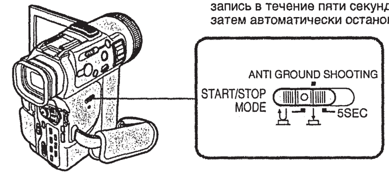
♙ : Recording starts when you press START/STOP, and stops when you press it again (default setting).
ANTI GROUND SHOOTING ⊥: Your camcorder records only while you press START/STOP. Use this mode to avoid recording unnecessary scenes.
5SEC: When you press START/STOP, your camcorder records for five seconds and then stops automatically.

При съемке объекта с близкого расстояния
Если Вы не можете добиться четкой фокусировки, передвиньте рычажок приводного вариообъектива в сторону "W" до получения четкой фокусировки. Съемку объекта можно выполнять в положении телефото, если он находится на расстоянии не менее 80 см от поверхности объектива или же около 1 см в положении широкоугольного вида.

Наезд видеокамеры цифровым методом
- Цифровой вариообъектив начинает срабатывать, если наезд видеокамеры превышает 10×.
- Качество изображения ухудшается по мере перемещения рычажка приводного вариообъектива к стороне "T".
- Цифровой вариообъектив невозможно использовать, когда переключатель POWER установлен в положение MEMORY.

Установка START/STOP MODE

♙ : При нажатии кнопки START/STOP начнется запись, а при повторном нажатии этой кнопки запись остановится (установка по умолчанию).
ANTI GROUND SHOOTING ⊥: Видеокамера будет выполнять запись только при нажатии кнопки START/STOP. Используйте этот режим, чтобы избежать записи ненужных эпизодов.
5SEC: Если нажать кнопку START/STOP, видеокамера будет производить запись в течение пяти секунд, а затем автоматически остановится.



Notes
- You cannot use the fader function in the 5SEC or ⊥ mode.
- The time code does not appear in the 5SEC mode.

To extend the recording time in the 5SEC mode
Five dots (●●●●●) appear, and then disappear at a rate of one per second. To extend the recording time, press START/STOP again before all the dots disappear. Recording continues for about five seconds from the moment you press START/STOP.

Indicators displayed in the recording mode

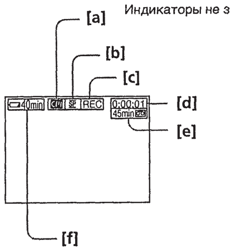
The indicators are not recorded on tapes.

Примечания
- Функцию фейдера невозможно использовать в режиме 5SEC или режиме ⊥.
- В режиме 5SEC счетчик ленты не появляется.

Для увеличения времени записи в режиме 5SEC
Пять точек (●●●●●) будут появляться, а затем исчезать по одной каждую секунду. Для увеличения времени записи нажмите кнопку START/STOP снова, до того как исчезнут все точки. Запись будет продолжаться около 5 секунд с момента нажатия кнопки START/STOP.

Индикаторы, отображаемые в режиме записи

Индикаторы не записываются на ленту.



[a] Cassette memory indicator
This appears when using a tape with cassette memory.
[b] Recording mode indicator
[c] STBY/REC indicator
[d] Time code/Tape counter
[e] Remaining tape indicator
This appears after you insert a cassette and record or play back for a while.
[f] Remaining battery time indicator
This appears after you turn on the power and wait for a while.

[a] Индикатор кассетной памяти
Этот индикатор появляется при использовании кассетной памяти.
[b] Индикатор режима записи
[c] Индикатор STBY/REC
[d] Счетчик ленты
[e] Индикатор оставшейся ленты
Этот индикатор появляется после установки кассеты и выполнения записи или воспроизведения в течение некоторого времени.
[f] Индикатор оставшегося времени работы батареи
Этот индикатор появляется после включения питания по прошествии некоторого времени.

Time code
The time code indicates the recording or playback time, "0:00:00" (hours : minutes : seconds) in CAMERA mode and "0:00:00:00" (hours : minutes : seconds : frames) in VTR mode. You cannot rewrite only the time code.

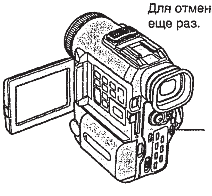
Remaining tape indicator
The indicator may not be displayed accurately depending on the tape.

Note on recording date
Recording date is not displayed during shooting, however, it is automatically recorded on the tape. You can check the recording date while in playback mode by pressing DATA CODE on the Remote Commander.

Shooting backlit subjects (BACK LIGHT)

When you shoot a subject with the light source behind the subject or a subject with a light background, use the backlight function.

Press BACK LIGHT in the recording or standby mode.
The ▣ indicator appears on the LCD screen or in the viewfinder.
To cancel, press BACK LIGHT again.



If you press EXPOSURE when shooting backlit subjects
The backlight function will be cancelled (p. 58).

Код времени
Код времени указывает время записи или воспроизведения, "0:00:00" (часы : минуты : секунды) в режиме CAMERA и "0:00:00:00" (часы : минуты : секунды : кадры) в режиме VTR. Код времени невозможно перезаписать.

Индикатор оставшейся ленты
Индикатор может показывать не совсем точные данные, в зависимости от ленты.

Дата записи
Дата записи не отображается во время съемки, однако она автоматически записывается на ленту. Дату записи можно проверить в режиме воспроизведения при нажатии кнопки DATA CODE на пульте дистанционного управления.

Съемка объектов с задней подсветкой (BACK LIGHT)

При выполнении съемки объекта с источником света позади него или объекта на светлом фоне, используйте функцию задней подсветки.

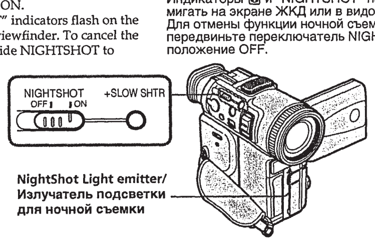
Нажмите кнопку BACK LIGHT в режиме записи или режиме ожидания.
Индикатор ▣ появится на экране ЖКД или в видоискателе.
Для отмены нажмите кнопку BACK LIGHT еще раз.

При нажатии кнопки EXPOSURE во время выполнения съемки объектов с задней подсветкой
Функция задней подсветки будет отменена (стр. 58).

Shooting in the dark (NightShot)

The NightShot function enables you to shoot a subject in a dark place. For example, you can satisfactorily record the environment of nocturnal animals for observation when you use this function.

While your camcorder is in the standby mode, slide NIGHTSHOT to ON.
◙ and "NIGHTSHOT" indicators flash on the LCD screen or in the viewfinder. To cancel the NightShot function, slide NIGHTSHOT to OFF.



Using +SLOW SHTR
The NightShot +Slow shutter mode makes subjects more than four times brighter than those recorded in the NightShot mode.

(1) Slide NIGHTSHOT to ON in the standby mode. ◙ indicator appears on the LCD screen or in the viewfinder.
(2) Press +SLOW SHTR repeatedly until the desired NIGHTSHOT indicator flashes.
The indicator changes as follows:
◙ (NIGHTSHOT) → ◙1 (NIGHTSHOT1) → ◙2 (NIGHTSHOT2) → ◙ (NIGHTSHOT)
To cancel the NightShot +Slow shutter mode, slide NIGHTSHOT to OFF.

Using the NightShot Light
The picture will be clearer with the NightShot Light on. To enable NightShot Light, set N.S. LIGHT to ON in the menu settings (p. 98).

Съемка в темноте (Ночная съемка)

Функция ночной съемки позволяет выполнять съемку объекта в темном месте. Например, можно с успехом выполнять съемку ночных животных с целью наблюдения при использовании данной функции.

В то время, когда видеокамера находится в режиме ожидания, передвиньте переключатель NIGHTSHOT в положение ON. Индикаторы ◙ и "NIGHTSHOT" начнут мигать на экране ЖКД или в видоискателе. Для отмены функции ночной съемки передвиньте переключатель NIGHTSHOT в положение OFF.

Использование режима ночной съемки +SLOW SHTR
Режим NightShot +Slow shutter (ночная съемка +медленный затвор) позволяет сделать объекты более чем в четыре раза ярче, по сравнению со съемкой в темноте с помощью функции ночной съемки.

(1) Передвиньте переключатель NIGHTSHOT в положение ON в режиме ожидания. Индикатор ◙ появится на экране ЖКД или в видоискателе.
(2) Нажимайте кнопку +SLOW SHTR неоднократно до тех пор, пока не начнет мигать нужный индикатор NIGHTSHOT.
Индикатор будет изменяться следующим образом:
◙ (NIGHTSHOT) → ◙1 (NIGHTSHOT1) → ◙2 (NIGHTSHOT2) → ◙ (NIGHTSHOT)
Для отмены режима NightShot +Slow shutter (ночная съемка +медленный затвор) передвиньте переключатель NIGHTSHOT в положение OFF.

Использование подсветки для ночной съемки
Изображение станет ярче, если включить функцию ночной подсветки. Для включения функции ночной подсветки установите переключатель N.S. LIGHT в положение ON в установках меню (стр. 98).

Notes
- Do not use the NightShot function in bright places (ex. the outdoors in the daytime). This may cause your camcorder to malfunction.
- When you keep NIGHTSHOT set to ON in normal recording, the picture may be recorded in incorrect or unnatural colours.
- If autofocusing is difficult when using the NightShot function, focus manually.
- Do not cover the NightShot Light emitter when using the NightShot function.
- Detach the lens hood when you shoot with the NightShot Light. Since the lens hood may block the NightShot Light.

While using the NightShot function, you cannot use the following functions:
- Exposure
- PROGRAM AE
- White balance
- Fader*
- Digital effect*

* You cannot use these functions only in the NightShot +Slow shutter mode.

Shutter speed in the NightShot +Slow shutter mode

Indicator	Shutter speed
◙1 (NIGHTSHOT1)	1/12
◙2 (NIGHTSHOT2)	1/3

The +SLOW SHTR button does not work:
- While the fader function is set or in use.
- While the digital effect function is in use.
- When NIGHTSHOT is set to OFF.
- When the POWER switch is set to MEMORY.

NightShot Light
NightShot Light rays are infrared and so are invisible. The maximum shooting distance using the NightShot Light is about 3 m (10 feet). The shooting distance will be twice or more in the NightShot +Slow shutter mode.

Примечания
- Не используйте функцию ночной съемки в ярких местах (например, на улице в дневное время). Это может привести к неисправности видеокамеры.
- Если оставить установку NIGHTSHOT в положении ON при нормальной записи, изображение может быть записано с неправильными или неестественными цветами.
- Если автофокусировка затруднена при использовании функции ночной съемки, выполните фокусировку вручную.
- Не закрывайте излучатель подсветки для ночной съемки при использовании функции ночной съемки.
- Отсоедините бленду, когда выполняете съемку с функцией ночной подсветки NightShot Light. Так как бленда может препятствовать выполнению функции NightShot Light.

При использовании функции ночной съемки невозможно использовать следующие функции:
- Экспозиция
- PROGRAM AE
- Баланс белого
- Фейдер*
- Цифровой эффект*

* Эти функции невозможно использовать только в режиме NightShot +Slow shutter (ночная съемка +медленный затвор).

Скорость затвора в режиме ночной съемки +медленного затвора

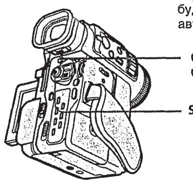
Индикатор	Скорость затвора
◙1 (NIGHTSHOT1)	1/12
◙2 (NIGHTSHOT2)	1/3

Кнопка +SLOW SHTR не работает:
- если установлена или используется функция фейдера
- если используется функция цифрового эффекта
- если переключатель NIGHTSHOT установлен в положение OFF
- если переключатель POWER установлен в положение MEMORY.

Подсветка для ночной съемки
Лучи подсветки для ночной съемки являются инфракрасными, и поэтому они невидимы. Максимальное расстояние для съемки при использовании подсветки для ночной съемки равно примерно 3 м. В режиме ночной суперсъемки +медленного затвора расстояние для съемки увеличивается в два раза или более.

Self-timer recording

You can make a recording with the self-timer. This mode is useful when you want to record yourself.
(1) Press ⏲ (self-timer) in the standby mode. The ⏲ (self-timer) indicator appears on the LCD screen or in the viewfinder.
(2) Press START/STOP.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically.



To stop the self-timer before recording
Press START/STOP again.
Use the Remote Commander for convenience.

To record still pictures on tapes using the self-timer
Press PHOTO in step 2 (p. 43).

To record still pictures on "Memory Stick"s
Press ⏲ (self-timer), then press PHOTO in MEMORY mode (p. 128).

To cancel self-timer recording
Press ⏲ (self-timer) so that the ⏲ indicator disappears from the LCD or viewfinder screen while your camcorder is in the standby mode.

Note
The self-timer recording mode is automatically cancelled when:
- Self-timer recording is finished.
- The POWER switch is set to OFF or VTR.

Запись по таймеру самозапуска

Можно выполнять запись по таймеру самозапуска. Этот режим может пригодиться в том случае, когда необходимо записать самого себя.
(1) Нажмите кнопку ⏲ (таймер самозапуска) в режиме ожидания. Индикатор ⏲ (таймер самозапуска) появится на экране ЖКД или в видоискателе.
(2) Нажмите кнопку START/STOP.
Таймер самозапуска начнет обратный отсчет, начиная с 10, со звуковым сигналом. В последние две секунды обратного отсчета звуковой сигнал будет звучать чаще, а затем автоматически начнется запись.

Для остановки таймера самозапуска перед записью
Нажмите кнопку START/STOP еще раз.
Пользуйтесь для удобства пультом дистанционного управления.

Для записи неподвижных изображений на ленту с помощью таймера самозапуска
Нажмите кнопку PHOTO в пункте 2 (стр. 43).

Для записи неподвижных изображений на "Memory Stick"
Нажмите кнопку ⏲ (таймер самозапуска), затем нажмите кнопку PHOTO в режиме MEMORY (стр. 128).

Для отмены записи по таймеру самозапуска
Нажмите кнопку ⏲ (таймер самозапуска), так чтобы индикатор ⏲ исчез с экрана ЖКД или видоискателя в тот момент, когда видеокамера находится в режиме ожидания.

ПРИМЕЧАНИЕ
Режим записи по таймеру самозапуска будет автоматически отменен в случаях:
- окончания записи по таймеру самозапуска.
- установки переключателя POWER в положение OFF или VTR.

END SEARCH

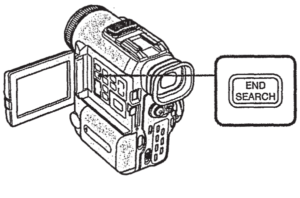
You can go to the end of the recorded portion after you record.

In the standby mode, press END SEARCH. The last five seconds of the recorded portion are played back and playback stops. You can monitor the sound from the speaker or headphones.

END SEARCH

Можно дойти до конца записанной части ленты после выполнения записи.

В режиме ожидания нажмите кнопку END SEARCH.
Будут воспроизведены последние пять секунд записанной части, и воспроизведение остановится. Звук можно контролировать через громкоговоритель или наушники.



To stop searching
Press END SEARCH again.

End search function
When you use a tape without cassette memory, the end search function does not work once you eject the cassette after you have recorded on the tape. If you use a tape with cassette memory, the end search function works even once you eject the cassette.
If there is a blank portion at the beginning or between the recorded portions, the end search function may not work correctly (p. 154).

Для остановки поиска
Нажмите кнопку END SEARCH еще раз.

Функция поиска конца
Если используется лента без кассетной памяти, функция поиска конца не будет работать после извлечения кассеты, на ленту которой была выполнена запись. При использовании ленты с кассетной памятью функция поиска конца будет работать даже после извлечения кассеты.
Если вначале записанной части или между записанными частями существует незаписанный участок, функция поиска конца может работать неправильно (стр. 154).

Playing back a tape

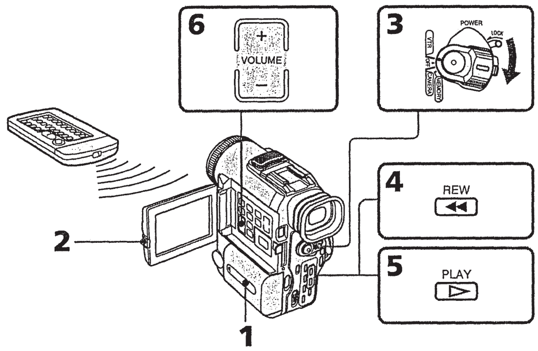
You can monitor the playback picture on the LCD screen. If you close the LCD panel, you can monitor the playback picture in the viewfinder. You can control playback using the Remote Commander supplied with your camcorder.

(1) Install the power source and insert the recorded tape.
(2) Press OPEN to open the LCD panel.
(3) Set the POWER switch to VTR while pressing the small green button. The video control buttons light up.
(4) Press ◀◀ to rewind the tape.
(5) Press ▶ to start playback.
(6) To adjust the volume, press either of the two buttons on VOLUME.

Воспроизведение ленты

Воспроизводимое изображение можно контролировать на экране ЖКД. Если панель ЖКД закрыть, то можно контролировать воспроизводимое изображение в видоискателе. Можно также контролировать воспроизведение с помощью пульта дистанционного управления, прилагаемого к видеокамере.

(1) Установите источник питания и вставьте записанную кассету.
(2) Нажмите OPEN, чтобы открыть панель ЖКД.
(3) Установите переключатель POWER в положение VTR, нажав маленькую зеленую кнопку. Появится индикация кнопок управления видеоизображением.
(4) Нажмите кнопку ◀◀ для перемотки ленты назад.
(5) Нажмите кнопку ▶ для начала воспроизведения.
(6) Для регулировки громкости нажимайте одну из двух кнопок VOLUME.

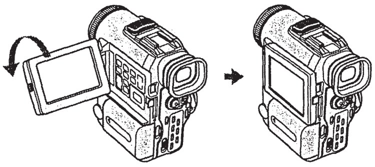


To stop playback
Press ■.

Для остановки воспроизведения
Нажмите кнопку ■.

When monitoring on the LCD screen
You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out.

Во время контроля на экране ЖКД
Можно повернуть панель ЖКД и придвинуть ее обратно на место к корпусу видеокамеры, так что экран ЖКД будет обращен наружу.



If you leave the power on for a long time
Your camcorder gets warm. This is not a malfunction.

When you open/close the LCD panel
Make sure that the LCD panel is set vertically.

To control the display of the screen indicators

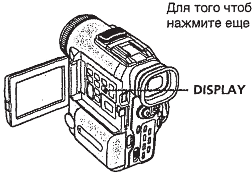
Press DISPLAY on your camcorder or on the Remote Commander supplied with your camcorder.
The indicators disappear from the LCD screen.
To make the indicators appear, press DISPLAY again.

Если Вы оставите питание включенным на длительное время,
видеокамера будет нагреваться. Однако это не является неполадкой.

Когда Вы открываете/закрываете панель ЖКД
следите за тем, чтобы панель ЖКД была установлена вертикально.

Для контроля отображения экранных индикаторов

Нажмите кнопку DISPLAY на видеокамере или на пульте дистанционного управления, прилагаемом к видеокамере.
Индикаторы исчезнут на экране ЖКД.
Для того чтобы индикаторы появились, нажмите еще раз кнопку DISPLAY.



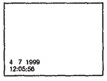
Using the data code function
Your camcorder automatically records not only images on the tape but also the recording data (date/time or various settings when recorded) **(Data code).**
You can only operate with the Remote Commander.

Использование функции кода даты
Видеокамера автоматически записывает не только изображения на ленту, но также и данные о записи (дату/время или разные установки при записи) **(Код даты).**
Этой функцией можно управлять только с помощью пульта дистанционного управления.

Press DATA CODE on the Remote Commander in the playback mode.

The display changes as follows:
date/time → various settings (SteadyShot, white balance, gain, shutter speed, aperture value, exposure mode) → no indicator

**Date/time/
Дата/время**



[a] SteadyShot OFF indicator
[b] Exposure mode indicator
[c] White balance indicator
[d] Gain indicator
[e] Shutter speed indicator
[f] Aperture value

Not to display various settings
Set DATA CODE to DATE in the menu settings (p. 98).
The display changes as follows:
date/time ←→ no indicator

Note
The pictures taken on the "Memory Stick" are not recorded with various settings.

Recording data
Recording data is your camcorder's information when you have recorded. In the recording mode, the recording data will not be displayed.

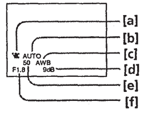
When you use the data code function, bars (-- -- --) appear if:
- A blank portion of the tape is being played back.
- The tape is unreadable due to tape damage or noise.
- The tape was recorded by a camcorder without the date and time set.

Data code
When you connect your camcorder to the TV, the data code also appears on the TV screen (p. 38).

Нажмите кнопку DATA CODE на пульте дистанционного управления в режиме воспроизведения.

Индикация будет изменяться следующим образом:
дата/время → разные установки (устойчивая съемка, баланс белого, усиление, скорость затвора, величина диафрагмы, режим экспозиции) → без индикации

**Various settings/
Разные установки**



[a] Индикатор SteadyShot OFF
[b] Индикатор режима экспозиции
[c] Индикатор баланса белого
[d] Индикатор усиления
[e] Индикатор скорости затвора
[f] Величина диафрагмы

Для отмены отображения разных установок
Установите параметр DATA CODE в положение DATE в установках меню (стр. 98).
Индикация будет изменяться следующим образом:
дата/время ←→ без индикации

ПРИМЕЧАНИЕ
На изображениях, записанных на "Memory Stick," различные установки не записываются.

Записанные данные
Записанные данные содержат информацию о записи, выполненной видеокамерой. В режиме записи данные отображаться не будут.

При использовании функции кода данных появляются полосы (-- -- --), если:
- Воспроизводится незаписанный участок на ленте.
- Лента не поддается считыванию из-за повреждений или помех.
- Запись на ленту была выполнена видеокамерой без установки даты и времени.

Код данных
Если видеокамеру подсоединить к телевизору, код данных также будет отображаться на экране телевизора (стр. 38).

Various playback modes

To operate video control buttons, set the POWER switch to VTR.

To view a still picture (playback pause)

Press II during playback. To resume normal playback, press ► or II.

To advance the tape

Press ►► in the stop mode. To resume normal playback, press ►.

To rewind the tape

Press ◄◄ in the stop mode. To resume normal playback, press ►.

To change the playback direction

Press < on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press ►.

To locate a scene monitoring the picture (picture search)

Keep pressing ◄◄ or ►► during playback. To resume normal playback, release the button.

To monitor the high-speed picture while advancing or rewinding the tape (skip scan)

Keep pressing ◄◄ while rewinding or ►► while advancing the tape. To resume rewinding or advancing, release the button.

To view the picture at slow speed (slow playback)

Press I► on the Remote Commander during playback. For slow playback in the reverse direction, press <, then press I► on the Remote Commander. To resume normal playback, press ►.

Переменные режимы воспроизведения

Для использования кнопок управления видеоизображением установите переключатель POWER в положение VTR.

Для просмотра неподвижного изображения (Пауза при воспроизведении)

Во время воспроизведения нажмите кнопку II. Для возобновления обычного воспроизведения нажмите кнопку ► или II.

Для ускоренной перемотки ленты вперед

Нажмите в режиме остановки кнопку ►►. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для ускоренной перемотки ленты назад

Нажмите в режиме остановки кнопку ◄◄. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для изменения направления воспроизведения

Нажмите кнопку < на пульте дистанционного управления во время воспроизведения для изменения направления воспроизведения. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для отыскания эпизода во время контроля изображения (Поиск изображения)

Нажмите и не отпускайте кнопку ◄◄ или ►► во время воспроизведения. Для возобновления обычного воспроизведения отпустите кнопку.

Для контроля изображения на высокой скорости во время ускоренной перемотки ленты вперед или назад (Поиск методом прогона)

Нажмите и не отпускайте кнопку ◄◄ во время ускоренной перемотки ленты назад или кнопку ►► во время ускоренной перемотки ленты вперед. Для возобновления обычной перемотки ленты вперед или назад отпустите кнопку.

Для просмотра воспроизведения изображения на замедленной скорости (Замедленное воспроизведение)

Нажмите кнопку I► на пульте дистанционного управления во время воспроизведения. Для замедленного воспроизведения в обратном направлении нажмите кнопку <, а затем нажмите кнопку I► на пульте дистанционного управления. Для возобновления обычного воспроизведения нажмите кнопку ►.

To view the picture at double speed

Press ×2 on the Remote Commander during playback. For double speed playback in the reverse direction, press <, then press ×2 on the Remote Commander. To resume normal playback, press ►.

To view the picture frame-by-frame

Press II► on the Remote Commander in the playback pause mode. For frame-by-frame playback in the reverse direction, press ◄II. To resume normal playback, press ►.

To search the last scene recorded (END SEARCH)

Press END SEARCH in the stop mode. The last five seconds of the recorded portion plays back and stops.

End Search

When you use a tape without cassette memory, the end search function does not work once you eject the cassette after you have recorded on the tape.
When you use a tape with cassette memory, the end search function works even once you eject the cassette.

In the various playback modes

Sound is muted.

When the playback pause mode lasts for five minutes

Your camcorder automatically enters the stop mode. To resume playback, press ►.

Slow playback

The slow playback can be performed smoothly on your camcorder: however, this function does not work for an output signal through the i DV IN/OUT jack.

When you play back a tape in reverse

Horizontal noise may appear at the centre, or the top and bottom of the screen. This is not a malfunction.

Для просмотра воспроизведения изображения на удвоенной скорости

Нажмите кнопку ×2 на пульте дистанционного управления во время воспроизведения. Для воспроизведения на удвоенной скорости в обратном направлении нажмите кнопку <, а затем нажмите кнопку ×2 на пульте дистанционного управления. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для покадрового просмотра воспроизведения изображения

Нажмите кнопку II► на пульте дистанционного управления в режиме паузы воспроизведения. Для покадрового воспроизведения в обратном направлении нажмите кнопку ◄II. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для поиска последнего записанного эпизода (END SEARCH)

Нажмите в режиме остановки кнопку END SEARCH. Будут воспроизведены последние пять секунд записанного участка на ленте, и воспроизведение остановится.

Функция END SEARCH

Если используется лента без кассетной памяти, функция поиска конца не будет работать после извлечения кассеты, на ленту которой была выполнена запись.
При использовании ленты с кассетной памятью функция поиска конца будет работать даже после извлечения кассеты.

В переменных режимах воспроизведения

Звук будет приглушен.

Если режим паузы при воспроизведении длится пять минут

Видеокамера автоматически перейдет в режим остановки. Для возобновления воспроизведения нажмите кнопку ►

Замедленное воспроизведение

Замедленное воспроизведение выполняется на видеокамере плавно, без помех; однако эта функция не работает при выходном сигнале через гнездо i DV IN/OUT.

При воспроизведении ленты в обратном направлении

В центре или вверху и внизу экрана могут появляться горизонтальные помехи. Однако это не является неисправностью.

Viewing the recording on TV

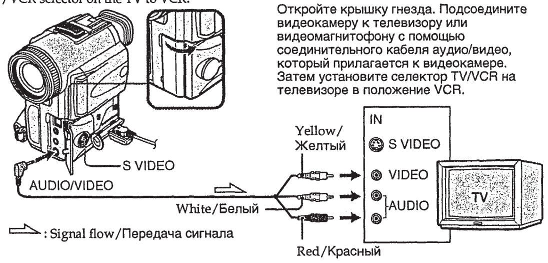
Connect your camcorder to your TV or VCR with the A/V connecting cable supplied with your camcorder to watch the playback picture on the TV screen. You can operate the video control buttons in the same way as when you monitor playback pictures on the LCD screen. When monitoring the playback picture on the TV screen, we recommend that you power your camcorder from mains using the AC power adaptor (p. 18). Refer to the operating instructions of your TV or VCR.

Open the jack cover. Connect your camcorder to the TV using the A/V connecting cable supplied with your camcorder. Then, set the TV/VCR selector on the TV to VCR.

Просмотр записи на экране телевизора

Подсоедините видеокамеру к телевизору или видеомагнитофону с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере, для просмотра воспроизводимого изображения на экране телевизора. Кнопками управления видеоизображением можно оперировать таким же образом, как и при управлении воспроизводимым изображением на экране ЖКД. При управлении воспроизводимым изображением на экране телевизора рекомендуется подключить питание к видеокамере от сетевой розетки с помощью сетевого адаптера переменного тока (стр. 18). См. инструкцию по эксплуатации Вашего телевизора или видеомагнитофона.

Откройте крышку гнезда. Подсоедините видеокамеру к телевизору или видеомагнитофону с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере. Затем установите селектор TV/VCR на телевизоре в положение VCR.



If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

Если телевизор уже подсоединен к видеомагнитофону

Подсоедините видеокамеру к входному гнезду LINE IN на видеомагнитофоне с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере. Установите селектор входного сигнала на видеомагнитофоне в положение LINE.

Если Ваш телевизор или видеомагнитофон монофонического типа

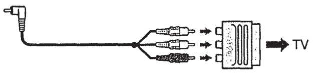
Подсоедините желтый штекер соединительного кабеля аудио/видео к входному гнезду видеосигнала, а белый или красный штекер к входному гнезду аудиосигнала на видеомагнитофоне или телевизоре. При подсоединении белого штекера будет получен сигнал канала L (левого). При подсоединении красного штекера будет получен сигнал канала R (правого).

If your TV/VCR has a 21-pin connector (EUROCONNECTOR)

Use the 21-pin adaptor supplied with your camcorder.

Если в телевизоре/видеомагнитофоне имеется 21-штырьковый разъем (EUROCONNECTOR)

Используйте 21-штырьковый адаптер, прилагаемый к видеокамере.



If your TV or VCR has an S video jack

Connect using an S video cable (not supplied) to obtain high-quality pictures. With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect the S video cable (not supplied) to the S video jacks on both your camcorder and the TV or the VCR.
This connection produces higher quality DV format pictures.

Using the AV cordless IR receiver

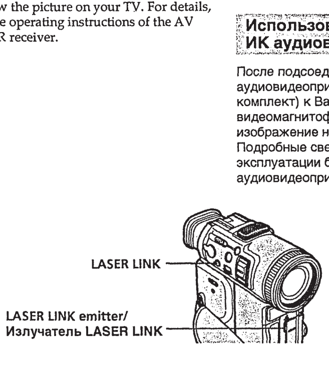
Once you connect the AV cordless IR receiver (not supplied) to your TV or VCR, you can easily view the picture on your TV. For details, refer to the operating instructions of the AV cordless IR receiver.

Если в телевизоре или видеомагнитофоне имеется видеогнездо S

Выполните соединение с помощью видеокабеля S (не входит в комплект) для получения высококачественного изображения. При таком соединении не понадобится подсоединять желтый штекер (видео) соединительного кабеля аудио/видео.
Подсоедините видеокабель S (не входит в комплект) к видеогнездам S на видеокамере и телевизоре или видеомагнитофоне.
Это соединение позволяет получить высококачественное изображение формата DV.

Использование беспроводного ИК аудиовидеоприемника

После подсоединения беспроводного ИК аудиовидеоприемника (не входит в комплект) к Вашему телевизору или видеомагнитофону можно легко наблюдать изображение на экране телевизора. Подробные сведения см. в инструкции по эксплуатации беспроводного ИК аудиовидеоприемника.

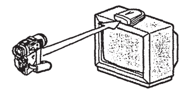


Viewing the recording on TV

(1) After connecting your TV and AV cordless IR receiver, set the POWER switch on the AV cordless IR receiver to ON.
(2) Turn the TV on and set the TV/VCR selector on the TV to VCR.
(3) Press LASER LINK. The lamp of LASER LINK lights up.
(4) Press ► on your camcorder to start playback.
(5) Point the LASER LINK emitter at the AV cordless IR receiver. Adjust the position of your camcorder and the AV cordless IR receiver to obtain clear playback pictures.

Просмотр записи на экране телевизора

(1) После подсоединения беспроводного ИК аудиовидеоприемника к Вашему телевизору установите переключатель POWER на беспроводном ИК аудиовидеоприемнике в положение ON.
(2) Включите телевизор и установите селектор TV/VCR на телевизоре в положение VCR.
(3) Нажмите кнопку LASER LINK. Загорится лампочка LASER LINK.
(4) Нажмите кнопку ► на видеокамере для начала воспроизведения.
(5) Направьте излучатель LASER LINK на беспроводный ИК аудиовидеоприемник. Отрегулируйте положение видеокамеры и беспроводного ИК аудиовидеоприемника для получения четкого воспроизводимого изображения.



To cancel the laser link function

Press LASER LINK. The lamp on the LASER LINK button goes out.

Notes
- When laser link is activated (the LASER LINK button is lit), your camcorder consumes power. Press LASER LINK to turn off the laser link function when it is not needed.
- When you attach the lens hood, the lens hood may block the infrared ray depending on the positions of the camcorder and the IR receiver. In this case, detach the lens hood.

If you turn the power off
Laser link turns off automatically.

Для отмены функции лазерного канала передачи сигналов

Нажмите кнопку LASER LINK. Лампочка на кнопке LASER LINK погаснет.

Примечания
- При включенном лазерном канале передачи сигналов (когда светится кнопка LASER LINK) видеокамера потребляет питание. Нажмите кнопку LASER LINK для выключения функции лазерного канала передачи сигналов, если она не требуется.
- Присоединенная бленда может препятствовать прохождению инфракрасного луча в зависимости от положения видеокамеры и ИК аудиовидеоприемника. В таком случае, бленду необходимо снять.

При выключении питания
Лазерный канал передачи сигналов выключится автоматически.

— Advanced Recording Operations —

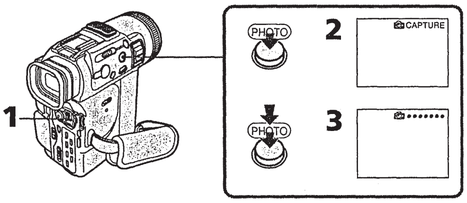
Photo recording on tapes

You can record a still picture. This mode is useful when you want to record a picture or when you print a picture using a video printer (not supplied).
You can record about 510 pictures in the SP mode and about 765 pictures in the LP mode on a 60-minute tape.
Besides the operation described here, your camcorder can record still pictures on "Memory Stick"s (p. 124).
(1) Set the POWER switch to CAMERA.
(2) In the standby mode, keep pressing PHOTO lightly until a still picture appears. The CAPTURE indicator appears. Recording does not start yet.
To change the still picture, release PHOTO, select a still picture again, and then press and hold PHOTO lightly.
(3) Press PHOTO deeper.
The still picture on the LCD screen or in the viewfinder is recorded for about seven seconds. The sound during those seven seconds is also recorded.
The still image is displayed on the LCD screen or in the viewfinder until recording is completed.

– Усовершенствованные операции съемки –

Фотосъемка на ленту

Неподвижное изображение можно записывать. Данный режим полезен, если нужно записать изображение или при выполнении печати изображения с помощью видеопринтера (не входит в комплект).
Вы можете записать около 510 изображений в режиме SP и около 765 изображений в режиме LP на 60-минутной ленте.
Кроме вышеописанной операции, видеокамера может выполнить запись неподвижных изображений на "Memory Stick" (стр. 124).
(1) Установите переключатель POWER в положение CAMERA.
(2) В режиме ожидания держите слегка нажатой кнопку PHOTO до тех пор, пока не появится неподвижное изображение. Появится индикатор CAPTURE. Запись пока еще не начинается.
Для изменения неподвижного изображения отпустите кнопку PHOTO, выберите неподвижное изображение снова, а затем нажмите и держите слегка нажатой кнопку PHOTO.
(3) Нажмите кнопку PHOTO сильнее.
Неподвижное изображение на экране ЖКД или в видоискателе будет записываться около семи секунд. В течение этих семи секунд будет также записываться и звук.
Неподвижное изображение отображается на экране ЖКД или в видоискателе до тех пор, пока не закончится запись.



Notes
- During photo recording, you cannot change the mode or setting.
- The photo recording function does not work:
  - While the fader function is set or in use.
  - While the digital effect function is set or in use.

To use the photo recording function using the Remote Commander
Press PHOTO on the Remote Commander. Your camcorder records a picture on the LCD screen or in the viewfinder immediately.

To use the photo recording function during normal CAMERA recording
You cannot check an image on the LCD screen or in the viewfinder by pressing PHOTO lightly. Press PHOTO deeper. The still picture is then recorded for about seven seconds and your camcorder returns to the standby mode.

If you record a moving subject with photo recording function
When you play back the still picture on other equipment, the picture may fluctuate.

To record clear and less fluctuated still pictures
We recommend that you record on "Memory Stick"s.

Примечания
- Во время фотосъемки невозможно изменить режим или установку.
- Функция фотосъемки не работает:
  - если установлена или используется функция фейдера
  - если установлена или используется функция цифровых эффектов.

Для использования функции фотосъемки с помощью пульта дистанционного управления
Нажмите кнопку PHOTO на пульте дистанционного управления. Видеокамера тотчас же запишет изображения на экране ЖКД или в видоискателе.

Для использования функции фотосъемки во время обычной записи CAMERA
Изображение на экране ЖКД или в видоискателе невозможно проверить с помощью легкого нажатия кнопки PHOTO. Нажмите кнопку PHOTO сильнее. Неподвижное изображение после этого будет записываться около семи секунд, и видеокамера вернется в режим ожидания.

При выполнении записи движущегося объекта с помощью функции фотосъемки
При воспроизведении неподвижного изображения на другой аппаратуре изображение может быть неустойчивым.

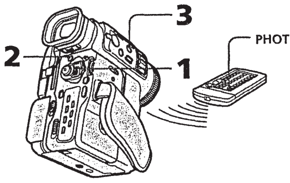
Для записи четких и более устойчивых неподвижных изображений
Рекомендуется записывать на "Memory Stick".

Self-timer photo recording

You can make a photo recording with the self-timer. This mode is useful when you want to record yourself.
(1) Set the POWER switch to CAMERA.
(2) Press ⏲ (self-timer). The ⏲ (self-timer) indicator appears on the LCD screen or in the viewfinder.
(3) Press PHOTO.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically.

Фотосъемка по таймеру самозапуска

Можно выполнять фотосъемку по таймеру самозапуска. Этот режим может пригодиться в том случае, когда необходимо записать самого себя.
(1) Установите переключатель POWER в положение CAMERA.
(2) Нажмите кнопку ⏲ (таймер самозапуска). Индикатор ⏲ (таймер самозапуска) появится на экране ЖКД или в видоискателе.
(3) Нажмите кнопку PHOTO.
Таймер самозапуска начнет обратный отсчет, начиная с 10, со звуковым сигналом. В последние две секунды обратного отсчета звуковой сигнал будет звучать чаще, а затем автоматически начнется запись.



To cancel self-timer recording

Press ⏲ (self-timer) so that the ⏲ indicator disappears from the LCD or viewfinder screen while your camcorder is in the standby mode. You cannot cancel the self-timer recording using the Remote Commander.

Note
The self-timer recording mode is automatically cancelled when:
- Self-timer recording is finished.
- The POWER switch is set to OFF or VTR.

Для отмены записи по таймеру самозапуска

Нажмите кнопку ⏲ (таймер самозапуска), так чтобы индикатор ⏲ исчез с экрана ЖКД или видоискателя в тот момент, когда видеокамера находится в режиме ожидания.
Запись по таймеру самозапуска невозможно отменить с помощью пульта дистанционного управления.

ПРИМЕЧАНИЕ
Режим записи по таймеру самозапуска будет автоматически отменен в случаях:
- окончания записи по таймеру самозапуска.
- установки переключателя POWER в положение OFF или VTR.

Photo recording on tapes

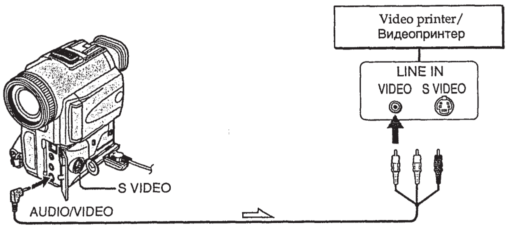
Printing the still picture

You can print a still picture by using the video printer (not supplied). Connect the video printer using the A/V connecting cable supplied with your camcorder.
Connect it to the AUDIO/VIDEO jack and connect the yellow plug of the cable to the video input of the video printer. Refer to the operating instructions of the video printer as well.

Фотосъемка на ленту

Печать неподвижного изображения

Печать неподвижного изображения можно выполнить с помощью видеопринтера (не входит в комплект). Подсоедините видеопринтер с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере.
Подсоедините его к гнезду AUDIO/VIDEO и подсоедините желтый штекер кабеля к входному гнезду видеосигнала на видеопринтере. См. также инструкцию по эксплуатации видеопринтера.



⇨ : Signal flow/Передача сигнала

If the video printer is equipped with S video input
Use the S video connecting cable (not supplied). Connect it to the S VIDEO jack and the S video input of the video printer.

Если в видеопринтере имеется входное видеогнездо S
Используйте соединительный видеокабель S (не входит в комплект). Подсоедините его к гнезду S VIDEO и к видеовходу S на видеопринтере.

Adjusting the white balance manually

You can manually adjust and set the white balance. This adjustment makes white subjects look white and allows more natural colour balance. Normally white balance is automatically adjusted.

In the standby/recording/memory mode, select a desired white balance mode in the menu settings (p. 98).

☼ (INDOOR) :
- Lighting condition changes quickly
- Too bright place such as photography studios
- Under sodium lamps or mercury lamps

☀ (OUTDOOR) :
- Recording a sunset/sunrise, just after sunset, just before sunrise, neon signs, or fireworks
- Under a colour matching fluorescent lamp

HOLD :
Recording a single-coloured subject or background

Регулировка баланса белого вручную

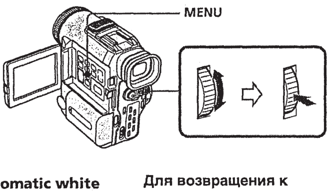
Баланс белого можно отрегулировать и установить вручную. Эта регулировка позволяет придать белым объектам по-настоящему белый цвет и добиться более естественного цветового баланса. Обычно баланс белого подстраивается автоматически.

В режиме ожидания/записи/памяти выберите нужный режим баланса белого в установках меню (стр. 98).

☼ INDOOR – режим "в помещении":
- При быстрой смене условий освещения
- В слишком ярком месте, например, фотостудии
- При освещении объекта натриевой или ртутной лампой

☀ OUTDOOR – режим "на улице":
- При записи заката/восхода солнца, вечерней или утренней зари, неоновых реклам или фейерверков
- При освещении флуоресцентными лампами разных цветов

HOLD – режим блокировки:
При записи одноцветного предмета или фона



To return to the automatic white balance mode
Set WHT BAL to AUTO in the menu settings (p. 98).

Для возвращения к автоматическому режиму баланса белого
Установите команду WHT BAL в положение AUTO в установках меню (стр. 98).

If the picture is being taken in a studio lit by TV lighting
We recommend that you record in the ☼ indoor mode.

When you record under fluorescent lighting
Use the automatic white balance or hold mode. Your camcorder may not adjust the white balance correctly in the ☼ indoor mode.

При фотографировании изображения в студии с телевизионным освещением
Рекомендуется использовать для записи режим "в помещении" ☼.

Во время записи при освещении лампами дневного света
Используйте автоматический режим баланса белого или режим блокировки. Видеокамера может не отрегулировать должным образом баланс белого в режиме "помещения" ☼.

Adjusting the white balance manually

In the automatic white balance mode
Point your camcorder at a white subject for about 10 seconds after setting the POWER switch to CAMERA to get a better adjustment when:
- You detach the battery for replacement.
- You bring your camcorder to the outdoors from the interior of a house, or vice versa.

In the hold white balance mode
Set the white balance to AUTO and reset to HOLD after a few seconds when:
- You change the PROGRAM AE mode.
- You bring your camcorder to the outdoors from the interior of a house, or vice versa.

Регулировка баланса белого вручную

В автоматическом режиме баланса белого
Направьте видеокамеру на белый предмет приблизительно на 10 секунд после установки переключателя POWER в положение CAMERA для получения улучшенной подстройки регулировки, когда:
- Вы отсоединяете батарейный блок для замены.
- Когда Вы выходите с камерой из помещения на улицу или наоборот.

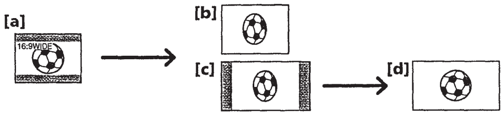
В режиме баланса белого "HOLD"
Установите баланс белого в положение AUTO и снова верните в положение HOLD через несколько секунд, когда:
- Вы изменяете режим PROGRAM AE.
- Когда Вы выходите с камерой из помещения на улицу или наоборот.

Using the wide mode

You can record a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9WIDE).
Black bands appear on the screen during recording in 16:9WIDE mode **[a]**. The picture during a playback on a normal TV **[b]** or on a wide-screen TV **[c]** is compressed in the widthwise direction. If you set the screen mode of the wide-screen TV to the full mode, you can watch pictures of normal images **[d]**.

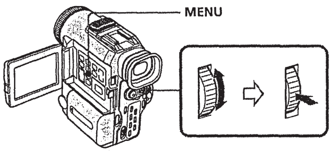
Использование широкоэкранного режима

Вы можете записывать широкоформатное изображение 16:9 для просмотра на широкоэкранном телевизоре формата 16:9 (16:9WIDE).
Во время записи в режиме 16:9WIDE на экране появятся черные полосы **[a]**. Изображение во время воспроизведения на обычном телевизоре **[b]** или широкоэкранном телевизоре **[c]** будет сжато по ширине. При установке экранного режима широкоэкранного телевизора в полноэкранный режим можно наблюдать изображения нормального размера **[d]**.



In the standby mode, set 16:9WIDE to ON in ▣ in the menu settings (p. 98).

В режиме ожидания установите команду 16:9WIDE в положение ON в ▣ в установках меню (стр. 98).



To cancel the wide mode
Set 16:9WIDE to OFF in the menu settings (p. 98).

Для отмены широкоэкранного режима
Установите команду 16:9WIDE в положение OFF в установках меню (стр. 98).

In the wide mode
You cannot select the old movie mode with DIGITAL EFFECT.

During recording
You cannot select or cancel the wide mode. When you cancel the wide mode, set your camcorder to the standby mode and then set 16:9WIDE to OFF in the menu settings.

В широкоэкранном режиме
Невозможно выбрать режим старинного кино с помощью функции DIGITAL EFFECT.

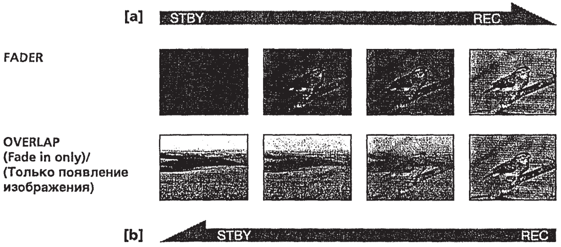
Во время записи
Невозможно выбрать или отменить широкоэкранный режим. Если нужно отменить широкоэкранный режим, установите видеокамеру в режим ожидания, а затем установите режим 16:9WIDE в положение OFF в установках меню.

Using the fader function

You can fade in or out to give your recording a professional appearance.

Использование функции фэйдера

Можно регулировать постепенное появление или исчезновение изображения, чтобы придать съемке профессиональный вид.



MONOTONE
When fading in, the picture gradually changes from black-and-white to colour.
When fading out the picture gradually changes from colour to black-and-white.

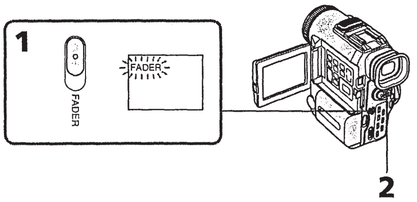
(1) When fading in [a]
In the standby mode, press FADER until the desired fader indicator flashes.
When fading out [b]
In the recording mode, press FADER until the desired fader indicator flashes.
The indicator changes as follows:
FADER→MONOTONE→OVERLAP→no indicator
The last selected fader mode is indicated first of all.

(2) Press START/STOP. After the fade in/out is carried out, your camcorder automatically returns to the normal mode.

MONOTONE
При плавном появлении или исчезновении изображение будет постепенно изменяться от черно-белого до цветного.
При плавном исчезновении изображение будет постепенно изменяться от цветного до черно-белого.

(1) При плавном появлении изображения [a]
В режиме ожидания нажимайте кнопку FADER, пока не начнет мигать нужный индикатор фейдера.
При плавном исчезновении изображения [b]
В режиме записи нажимайте кнопку FADER, пока не начнет мигать нужный индикатор фейдера.
Индикатор будет изменяться следующим образом:
FADER→MONOTONE→OVERLAP→без индикатора
Последний из выбранных режимов фейдера отображается первым.

(2) Нажмите кнопку START/STOP. После выполнения операции появления/исчезновения изображения видеокамера автоматически вернется в обычный режим.



Using the fader function

To cancel the fader function

After the fade in/out is carried out : Your camcorder automatically returns to the normal mode.
Before the fade in/out is carried out : Before pressing START/STOP, press FADER until the indicator disappears.

Note
You cannot use the following functions while using the fader function. Also, you cannot use the fader function while using the following functions.
- Digital effect
- Low lux mode of PROGRAM AE (Overlap function only)
- NightShot +Slow shutter
- Photo recording

When the OVERLAP indicator appears
Your camcorder automatically stores the image recorded on a tape. As the image is being stored, the OVERLAP indicator flashes fast, and the playback picture is displayed.
At this stage, the picture may not be recorded clearly, depending on the tape condition.

When START/STOP MODE is set to ⊥ or 5SEC
You cannot use the fader function.

While in MEMORY mode
You cannot use the fader function.

Использование функции фейдера

Для отмены функции фейдера

После выполнения операции появления/исчезновения изображения : Видеокамера автоматически вернется в обычный режим.
Перед выполнением операции появления/исчезновения изображения : До нажатия кнопки START/STOP нажмите кнопку FADER, пока не исчезнет индикатор.

ПРИМЕЧАНИЕ
При использовании функции фейдера невозможно использовать нижеследующие функции. Также при использовании указанных ниже функций невозможно использовать функцию фейдера.
- Цифровой эффект
- Режим низкой освещенности PROGRAM AE (только функция наложения)
- Ночная съемка +медленный затвор
- Фотосъемка

При появлении индикатора OVERLAP
Видеокамера автоматически сохранит изображение, записываемое на ленту. Во время сохранения изображения индикатор OVERLAP будет часто мигать, и будет отображаться воспроизводимое изображение.
На этом этапе изображение может быть записано не совсем четко в зависимости от состояния ленты.

Если команда START/STOP MODE установлена в положение ⊥ или 5SEC
Функцию фейдера невозможно использовать.

При использовании режима MEMORY
Функцию фейдера невозможно использовать.

Using special effects – Picture effect

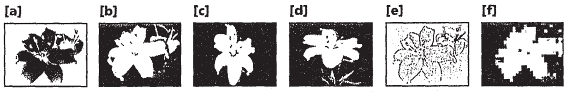
You can digitally process images to obtain special effects like those in films or on TV.

NEG. ART [a] :	The colour and brightness of the picture is reversed.
SEPIA :	The picture gets sepia-toned.
B&W :	The picture appears in monochrome (black-and-white).
SOLARIZE [b] :	The light intensity is clearer, and the picture looks like an illustration.
SLIM [c] :	The picture expands vertically.
STRETCH [d] :	The picture expands horizontally.
PASTEL [e] :	The contrast of the picture is emphasized, and the picture looks like an animated cartoon.
MOSAIC [f] :	The picture gets mosaic-patterned.

Использование специальных эффектов – Эффект изображения

Обработку изображения цифровым методом можно выполнять для получения специальных эффектов, как в кинофильмах или на телевидении.

NEG. ART [a] :	Цвет и яркость изображения будут негативными.
SEPIA :	Изображение будет в цвете сепии.
B&W :	Изображение будет монохромным (черно-белым).
SOLARIZE [b] :	Яркость света будет усилена, а изображение будет выглядеть как иллюстрация.
SLIM [c] :	Изображение растянется по вертикали.
STRETCH [d] :	Изображение растянется по горизонтали.
PASTEL [e] :	Подчеркивается контрастность изображения, которому придается мультипликационный вид.
MOSAIC [f] :	Изображение будет мозаическим.

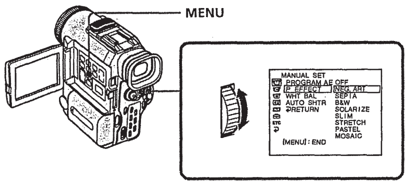


Using special effects – Picture effect

(1) In the standby/recording mode, select P EFFECT in 🅼 in the menu settings. (p. 98).
(2) Select the desired picture effect mode in the menu settings.

Использование специальных эффектов – Эффект изображения

(1) В режиме ожидания/записи выберите команду P EFFECT в 🅼 в установках меню. (стр. 98).
(2) Выберите нужный эффект изображения в установках меню.



To turn the picture effect function off

Set P EFFECT to OFF in the menu settings (p. 98).

While using the picture effect function
You cannot select the old movie mode with DIGITAL EFFECT.

When you turn the power off
Your camcorder automatically returns to the normal mode.

Для выключения функции эффекта изображения

Установите команду P EFFECT в положение OFF в установках меню (стр. 98).

При использовании функции эффекта изображения
Невозможно выбрать режим старинного кино с помощью функции DIGITAL EFFECT.

При выключении питания
Видеокамера автоматически вернется в обычный режим.

Using special effects – Digital effect

You can add special effects to recorded pictures using the various digital functions. The sound is recorded normally.

STILL
You can record a still picture so that it is superimposed on a moving picture.

FLASH (FLASH MOTION)
You can record still pictures successively at constant intervals.

LUMI. (LUMINANCEKEY)
You can swap a brighter area in a still picture with a moving picture.

TRAIL
You can record the picture so that an incidental image like a trail is left.

SLOW SHTR (SLOW SHUTTER)
You can slow down the shutter speed. The slow shutter mode is good for recording dark pictures more brightly.

OLD MOVIE
You can add an old movie type atmosphere to pictures. Your camcorder automatically sets the wide mode to ON and picture effect to SEPIA.

Использование специальных эффектов – Цифровой эффект

Специальные эффекты можно добавлять к записываемому изображению с помощью различных цифровых функций. Записываемый звук будет обычным.

STILL
Можно записывать неподвижное изображение для наложения его на подвижное изображение.

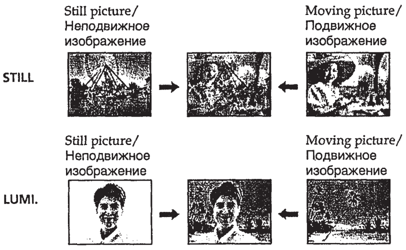
FLASH (FLASH MOTION)
Неподвижные изображения можно записывать последовательно через определенные интервалы времени.

LUMI. (LUMINANCEKEY)
Яркие места на неподвижном изображении можно изменять на подвижные изображения.

TRAIL
Можно записывать изображение с эффектом запаздывания.

SLOW SHTR (SLOW SHUTTER)
Можно замедлить скорость затвора. Режим медленного затвора подходит для записи темных изображений.

OLD MOVIE
Можно придавать изображениям атмосферу старинного кино. Видеокамера будет автоматически устанавливать широкоэкранный режим в положение ON, а эффект изображения в положение SEPIA.



Using special effects – Digital effect

(1) In the standby/recording mode, press DIGITAL EFFECT. The digital effect indicator appears.
(2) Turn the SEL/PUSH EXEC dial to select the desired digital effect mode.
The indicator changes as follows:
STILL ←→ FLASH ←→ LUMI. ←→ TRAIL ←→ SLOW SHTR ←→ OLD MOVIE
(3) Press the SEL/PUSH EXEC dial. The indicator lights up and the bars appear. In the STILL and LUMI. modes, the still picture is stored in memory.
(4) Turn the SEL/PUSH EXEC dial to adjust the effect.

Items to be adjusted

STILL	The rate of the still picture you want to superimpose on the moving picture
FLASH	The interval of flash motion
LUMI.	The colour scheme of the area in the still picture which is to be swapped with a moving picture
TRAIL	The time until the incidental image vanishes
SLOW SHTR	Shutter speed. The larger the shutter speed number, the slower the shutter speed.
OLD MOVIE	No adjustment necessary

The more bars there are on the screen, the stronger the digital effect. The bars appear in the following modes: STILL, FLASH, LUMI. and TRAIL.

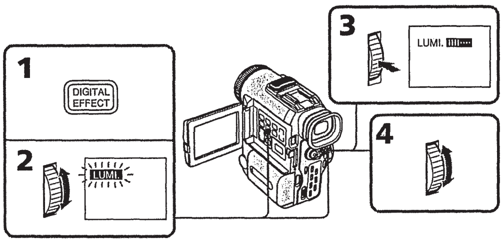
Использование специальных эффектов – Цифровой эффект

(1) В режиме ожидания/записи нажмите кнопку DIGITAL EFFECT. Появится индикатор цифрового эффекта.
(2) Поверните диск SEL/PUSH EXEC для выбора режима нужного цифрового эффекта.
Индикатор будет изменяться следующим образом:
STILL ←→ FLASH ←→ LUMI. ←→ TRAIL ←→ SLOW SHTR ←→ OLD MOVIE
(3) Нажмите диск SEL/PUSH EXEC. Высветится индикатор, и появятся полосы. В режимах STILL и LUMI. неподвижное изображение будет сохранено в памяти.
(4) Поверните диск SEL/PUSH EXEC для регулировки изображения.

Элементы для регулировки

STILL	Интенсивность неподвижного изображения, которое нужно наложить на подвижное изображение
FLASH	Интервал прерывистого движения
LUMI.	Цветовая гамма области неподвижного изображения, которую нужно заменить подвижным изображением
TRAIL	Время исчезновения побочного изображения
SLOW SHTR	Скорость затвора. Чем больше величина скорости затвора, тем медленнее скорость затвора.
OLD MOVIE	Не требуется никаких регулировок

Чем больше полос на экране, тем сильнее цифровой эффект. Полосы появляются в следующих режимах: STILL, FLASH, LUMI. и TRAIL.



Using special effects – Digital effect

To cancel the digital effect

Press DIGITAL EFFECT. The digital effect indicator disappears.

Notes

- The following functions do not work during digital effect:
  - Fader
  - Low lux mode of PROGRAM AE
  - Photo recording
  - NightShot +Slow shutter
- The following function does not work in the slow shutter mode:
  - PROGRAM AE
- The following functions do not work in the old movie mode:
  - Wide mode
  - Picture effect
  - PROGRAM AE

When you turn the power off
The digital effect will be automatically cancelled.

When recording in the slow shutter mode
Auto focus may not be effective. Focus manually using a tripod.

Shutter speed

Shutter speed number	Shutter speed
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3

Использование специальных эффектов – Цифровой эффект

Для отмены цифрового эффекта

Нажмите кнопку DIGITAL EFFECT. Индикатор цифрового эффекта исчезнет.

Примечания

- Следующие функции не работают при использовании цифрового эффекта:
  - Фейдер
  - Режим низкой освещенности PROGRAM AE
  - Фотосъемка
  - Ночная съемка +медленный затвор
- Нижеуказанная функция не работает в режиме медленного затвора:
  - PROGRAM AE
- Следующие функции не работают в режиме старинного кино:
  - Широкоэкранный режим
  - Эффект изображения
  - PROGRAM AE

При выключении питания
Цифровой эффект будет автоматически отменен.

При записи в режиме медленного затвора
Автоматическая фокусировка может быть не эффективной. Выполните фокусировку вручную, используя штатив.

Скорость затвора

Величина скорости затвора	Скорость затвора
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3

Using the PROGRAM AE function

You can select PROGRAM AE (Auto Exposure) mode to suit your specific shooting requirements.

Spotlight mode
This mode prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light in the theatre.

Soft portrait mode
This mode brings out the subject while creating a soft background for subjects such as people or flowers.

Sports lesson mode
This mode minimizes shake on fast-moving subjects such as in tennis or golf.

Beach & ski mode
This mode prevents people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.

Sunset & moon mode
This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

Landscape mode
This mode is for when you are recording distant subjects such as mountains and prevents your camcorder from focusing on glass or metal mesh in windows when you are recording a subject behind glass or a screen.

Low lux mode
This mode makes subjects brighter in insufficient light.

Использование функции PROGRAM AE

Режим PROGRAM AE (автоматическая экспозиция) можно выбирать в соответствии со специфическими требованиями к съемке.

Режим прожекторного освещения
Данный режим позволяет выполнять съемку таким образом, чтобы лица людей не выглядели слишком бледными, например, при съемке объектов в театре, где часто применяется яркое освещение.

Мягкий портретный режим
Этот режим позволяет выделить объект на мягком фоне и подходит для съемки, например людей или цветов.

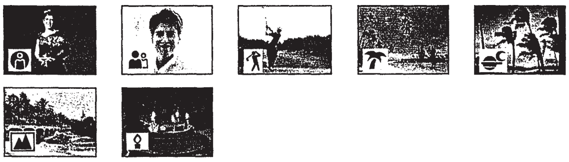
Режим спортивных состязаний
Этот режим позволяет уменьшить дрожание при съемке быстро движущихся объектов, например, в таких играх, как теннис или гольф.

Пляжный и лыжный режим
Этот режим препятствует появлению темных лиц при съемке людей в местах с ярким освещением или отраженным светом, например, на пляже в разгар лета или на снежном склоне.

Режим захода солнца и луны
Этот режим позволяет в точности отражать обстановку п съемке заката, общих ночных видов, фейерверков и неоновых реклам.

Ландшафтный режим
Этот режим позволяет выполнять съемку отдаленных объектов, таких как горы, и предотвращает фокусировку видеокамеры на стекло или металлическую решетку на окнах, если запись выполняется через стекло или решетку.

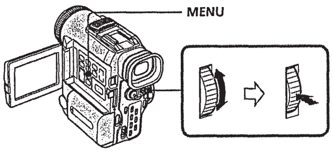
Режим низкой освещенности
Этот режим делает объекты ярче при недостаточном освещении.



Using the PROGRAM AE function

(1) In the standby or memory mode, select PROGRAM AE in M in the menu settings (p. 98).

(2) Select the desired PROGRAM AE mode by turning the SEL/PUSH EXEC dial.
The indicator changes as follows:
↔ ↔ ↔ ↔ ↔ ↔



To turn the PROGRAM AE function off

Set PROGRAM AE to AUTO in the menu settings (p. 98).

Notes

- In the spotlight, sports lesson and beach & ski modes, you cannot take close-ups. This is because your camcorder is set to focus only on subjects in the middle to far distance.
- In the sunset & moon and landscape modes, your camcorder is set to focus only on distant subjects.
- The following functions do not work in the PROGRAM AE mode:
  - Slow shutter
  - Old movie
- The following functions do not work in the low lux mode:
  - Digital effect
  - Overlap
- While setting the NIGHTSHOT to ON, the PROGRAM AE function does not work. (The indicator flashes.)
- While shooting in MEMORY mode, the low lux and sports lesson modes do not work. (The indicator flashes.)

While WHT BAL is set to AUTO in the menu settings

The white balance is adjusted even if the PROGRAM AE function is selected.

Использование функции PROGRAM AE

(1) В режиме ожидания или памяти выберите команду PROGRAM AE в M в установках меню (стр. 98).

(2) Выберите нужный режим PROGRAM AE, повернув диск SEL/PUSH EXEC.
Индикатор будет изменяться следующим образом:
↔ ↔ ↔ ↔ ↔ ↔

Для выключения функции PROGRAM AE

Установите команду PROGRAM AE в положение AUTO в установках меню (стр. 98).

Примечания

- В режимах прожекторного освещения, спортивных состязаний, а также в пляжном и лыжном режиме невозможно выполнять съемку крупным планом. Это объясняется тем, что видеокамера настроена для фокусировки только на объекты, находящиеся на среднем и дальнем расстояниях.
- В режиме захода солнца и луны, а также в ландшафтном режиме видеокамера настроена для фокусировки только на дальние объекты.
- Следующие функции не работают в режиме PROGRAM AE:
  - Медленный затвор
  - Старинное кино
- Следующие функции не работают в режиме низкой освещенности:
  - Цифровой эффект
  - Наложение изображения
- Когда функция ночной съемки NIGHTSHOT устанавливается в положение ON, функция PROGRAM AE не работает. (Индикатор будет мигать.)
- При съемке в режиме MEMORY режим низкой освещенности и режим спортивных состязаний не работают. (Индикатор будет мигать.)

Когда команда WHT BAL установлена в положение AUTO в установках меню

Баланс белого будет отрегулирован, даже если выбрана функция PROGRAM AE.

Using the PROGRAM AE function

If you are recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp

Flickering or changes in colour may occur in the following modes. If this happens, turn the PROGRAM AE function off.
- Soft portrait mode
- Sports lesson mode

Использование функции PROGRAM AE

Если запись выполняется при использовании газоразрядной, натриевой или ртутной лампы

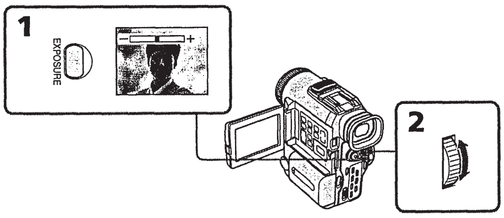
В следующих режимах могут возникнуть мерцание или изменения цветности. Если это произойдет, выключите функцию PROGRAM AE.
- Мягкий портретный режим
- Режим спортивных состязаний

Adjusting the exposure manually

You can manually adjust and set the exposure. Adjust the exposure manually in the following cases:
- The subject is backlit
- Bright subject and dark background
- To record dark pictures (e.g. night scenes) faithfully

(1) In the standby/playback/memory mode, press EXPOSURE. The exposure indicator appears.

(2) Turn the SEL/PUSH EXEC dial to adjust the brightness.



To return to the automatic exposure mode

Press EXPOSURE again.

Note

When you adjust the exposure manually, the backlight function does not work.

If you change the PROGRAM AE mode or slide NIGHTSHOT to ON

Your camcorder automatically returns to the automatic exposure mode.

Регулировка экспозиции вручную

Экспозицию можно отрегулировать и установить вручную. Выполняйте ручную регулировку экспозиции в следующих случаях:
- Объект на фоне задней подсветки
- Яркий объект на темном фоне
- Для записи темных изображений (например, ночных эпизодов) с большой достоверностью

(1) В режиме ожидания/воспроизведения/памяти нажмите кнопку EXPOSURE. Появится индикатор экспозиции.

(2) Поверните диск SEL/PUSH EXEC для регулировки яркости.

Для возврата в режим автоматической экспозиции

Нажмите кнопку EXPOSURE еще раз.

ПРИМЕЧАНИЕ

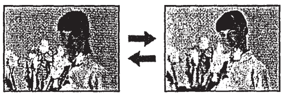
При выполнении регулировки экспозиции вручную функция задней подсветки не работает.

При изменении режима PROGRAM AE или перемещении переключателя NIGHTSHOT в положение ON

Видеокамера автоматически вернется в режим автоматической экспозиции.

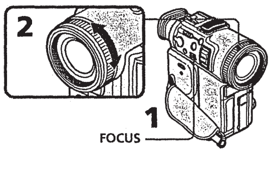
Focusing manually

You can gain better results by manually adjusting the focus in the following cases:
- The autofocus mode is not effective when shooting
  - subjects through glass coated with water droplets
  - horizontal stripes
  - subjects with little contrast with backgrounds such as walls and sky
- When you want to change the focus from a subject in the foreground to a subject in the background
- Shooting a stationary subject when using a tripod



(1) Press FOCUS lightly in the standby/recording/memory mode. The indicator appears on the LCD screen or in the viewfinder.

(2) Turn the focus ring to sharpen focus.



Фокусировка вручную

Можно получить улучшенные результаты путем регулировки фокусировки вручную в следующих случаях:
- Режим автоматической фокусировки является неэффективным при выполнении съемки
  - объектов через стекло, покрытое каплями
  - горизонтальных полос
  - объектов с малой контрастностью на таком фоне, как стена или небо
- Если нужно выполнить изменение фокусировки с объекта на переднем плане на объект на заднем плане
- При выполнении съемки неподвижных объектов с использованием штатива

(1) Нажмите слегка кнопку FOCUS в режиме ожидания/записи/памяти. На экране ЖКД или в видоискателе появится индикатор .

(2) Поверните кольцо фокусировки для получения четкой фокусировки.

Focusing manually

To return to the autofocus mode
Press FOCUS lightly to turn off the ⓕ, ⛰ or 👤 indicator.

To record distant subjects
Press FOCUS deeper (INFINITY). Your camcorder focuses on distant subjects and the ⛰ indicator appears. When you release FOCUS, your camcorder returns to the manual focus mode. Use this mode when your camcorder focuses on near objects even though you are trying to shoot a distant object.

To obtain correct focus
First, focus a subject with the power zoom lever moved toward the "T" (telephoto) position, then adjust the zoom.

When you shoot close to the subject
Focus at the end of the "W" (wide-angle) position.

ⓕ changes as follows:
⛰ when recording a distant subject.
👤 when the subject is too close to focus on.

Фокусировка вручную

Для возврата в режим автоматической фокусировки
Нажмите слегка кнопку FOCUS для отключения индикаторов ⓕ, ⛰ или 👤.

Для съемки удаленных объектов
Нажмите кнопку FOCUS сильнее (INFINITY). Видеокамера выполнит фокусировку на удаленные объекты, и появится индикатор ⛰. Если отпустить кнопку FOCUS, видеокамера вернется в режим ручной фокусировки. Используйте этот режим в том случае, когда видеокамера выполняет фокусировку на ближние объекты, даже если Вы пытаетесь выполнить съемку отдаленного объекта.

Для получения правильной фокусировки
Сначала наведите фокус на объект, когда рычажок приводного вариообъектива перемещен в направлении положения "T" (телефото), затем отрегулируйте наезд видеокамеры.

При съемке объекта с близкого расстояния
Выполните фокусировку в конце положения "W" (широкоугольное).

Индикатор ⓕ будет изменяться следующим образом:
⛰ при записи удаленных объектов.
👤 если объект находится слишком близко, чтобы выполнить фокусировку на него.

Playing back a tape with picture effects

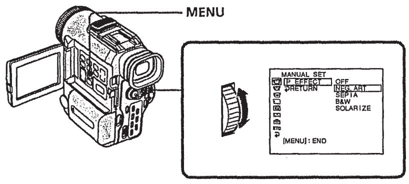
During playback, you can process a scene using the picture effect functions: NEG. ART, SEPIA, B&W and SOLARIZE.

In the playback/playback pause mode, select the desired picture effect mode in the menu settings (p. 98).
For details of each picture effect function, see page 50.

Воспроизведение ленты с эффектами изображения

Во время воспроизведения можно видоизменять изображение с помощью функций эффектов изображения: NEG. ART, SEPIA, B&W и SOLARIZE.

В режиме воспроизведения/паузы воспроизведения выберите нужный эффект изображения в установках меню (стр. 98).
Подробные сведения по каждой функции эффектов изображения приведены на стр. 50.



To cancel the picture effect function
Set P EFFECT to OFF in the menu settings (p. 98).

Notes
- You cannot process the picture that is input from other equipment using the picture effect function.
- To record pictures that you have processed using the picture effect function, record the pictures on the VCR, using your camcorder as a player.

Pictures processed by the picture effect function
Pictures processed by the picture effect function are not output through the i DV IN/OUT jack.

When you set the POWER switch to OFF or stop playing back
The picture effect function is automatically cancelled.

Для отмены функции эффектов изображения
Установите команду P EFFECT в положение OFF в установках меню (стр. 98).

Примечания
- Введенные с другой аппаратуры изображения, невозможно изменять с помощью функции эффектов изображения.
- Для записи изображений, которые были видоизменены с помощью функции эффектов изображения, запишите изображения на видеомагнитофон, используя видеокамеру в качестве плеера.

Изображения, видоизмененные с помощью функции эффектов изображения
Изображения, видоизмененные с помощью функции эффектов изображения, не передаются через гнездо входа/выхода i DV IN/OUT.

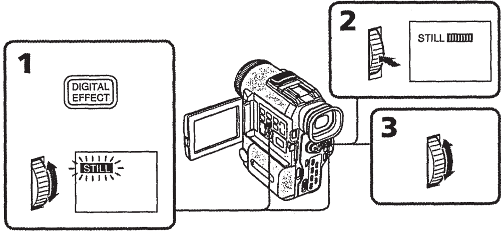
При установке переключателя POWER в положение OFF или остановке воспроизведения
Функция эффектов изображения будет автоматически отменена.

Playing back a tape with digital effects

During playback, you can process a scene using the digital effect functions: STILL, FLASH, LUMI. and TRAIL.
(1) In the playback/playback pause mode, press DIGITAL EFFECT and turn the SEL/PUSH EXEC dial until the desired digital effect indicator (STILL, FLASH, LUMI. or TRAIL) flashes.
(2) Press the SEL/PUSH EXEC dial.
The digital effect indicator lights up and the bars appear. In the STILL or LUMI. mode, the picture is captured and is stored in memory as a still picture at the time you press the SEL/PUSH EXEC dial.
(3) Turn the SEL/PUSH EXEC dial to adjust the effect.
For details of each digital effect function, see page 52.

Воспроизведение ленты с цифровыми эффектами

Во время воспроизведения можно видоизменять изображение с помощью функций цифровых эффектов: STILL, FLASH, LUMI. и TRAIL.
(1) В режиме воспроизведения/паузы воспроизведения нажмите кнопку DIGITAL EFFECT и поворачивайте диск SEL/PUSH EXEC до тех пор, пока не начнет мигать индикатор нужного цифрового эффекта (STILL, FLASH, LUMI. или TRAIL).
(2) Нажмите диск SEL/PUSH EXEC.
Высветится индикатор цифрового эффекта, и появятся полосы. В режиме STILL или LUMI. во время нажатия диска SEL/PUSH EXEC изображение снимается и сохраняется в память как неподвижное изображение.
(3) Поверните диск SEL/PUSH EXEC для регулировки изображения.
Подробные сведения по каждой функции цифровых эффектов приведены на стр. 52.



To cancel the digital effect function
Press DIGITAL EFFECT.

Notes
- You cannot process the picture that is input from other equipment using the digital effect function.
- To record pictures that you have processed using the digital effect, record the pictures on the VCR, using your camcorder as a player.

Pictures processed by the digital effect function
Pictures processed by the digital effect function are not output through the i DV IN/OUT jack.

When you set the POWER switch to OFF or stop playing back
The digital effect function is automatically cancelled.

Для отмены функции цифровых эффектов
Нажмите кнопку DIGITAL EFFECT.

Примечания
- Введенные с другой аппаратуры изображения, невозможно изменять с помощью функции цифровых эффектов изображения.
- Для записи изображений, которые были видоизменены с помощью функции цифровых эффектов, запишите изображения на видеомагнитофон, используя видеокамеру в качестве плеера.

Изображения, видоизмененные с помощью функции цифровых эффектов
Изображения, видоизмененные с помощью функции цифровых эффектов, не передаются через гнездо входа/выхода i DV IN/OUT.

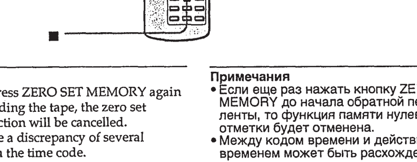
При установке переключателя POWER в положение OFF или остановке воспроизведения
Функция цифровых эффектов будет автоматически отменена.

Quickly locating a scene using the zero set memory function

Your camcorder rewinds or advances the tape to locate the desired scene, and the searching automatically stops at the scene having a tape counter value of "0:00:00." You can do this with the Remote Commander.
(1) In the playback mode, press DISPLAY if the counter is not on the LCD screen or in the viewfinder.
(2) Press ZERO SET MEMORY at the point you want to locate later. The tape counter shows "0:00:00" and the ZERO SET MEMORY indicator flashes.
(3) Press ■ when you want to stop playback.
(4) Press ◀◀ to rewind the tape to the tape counter's zero point. The tape stops automatically when the tape counter reaches approximately zero. The ZERO SET MEMORY indicator disappears and the time code appears.
(5) Press ▶. Playback starts.

Быстрое отыскание эпизода с помощью функции памяти нулевой отметки

Видеокамера перематывает ленту назад или вперед для отыскания нужного эпизода с автоматической остановкой поиска на эпизоде, где показание счетчика ленты - "0:00:00." Это можно делать с помощью пульта дистанционного управления.
(1) В режиме воспроизведения нажмите кнопку DISPLAY, если на экране ЖКД или в видоискателе отсутствует счетчик.
(2) Нажмите кнопку ZERO SET MEMORY в том месте, которое нужно найти позже. Показание счетчика станет равным "0:00:00", и начнет мигать индикатор ZERO SET MEMORY.
(3) Нажмите кнопку ■, когда нужно остановить воспроизведение.
(4) Нажмите кнопку ◀◀ для ускоренной перемотки ленты назад к нулевой точке счетчика ленты. Лента остановится автоматически, если счетчик достигнет приблизительно нулевой отметки. Индикатор ZERO SET MEMORY исчезнет, и появится код времени.
(5) Нажмите кнопку ▶. Начнется воспроизведение.



Notes
- When you press ZERO SET MEMORY again before rewinding the tape, the zero set memory function will be cancelled.
- There may be a discrepancy of several seconds from the time code.
- The zero set memory function may not work when there is a blank portion between pictures on a tape.

ZERO SET MEMORY functions also in the recording standby mode
When you insert a scene in the middle of a recorded tape, press ZERO SET MEMORY at the point you want to end the insertion. Rewind the tape to the insert start point, and start recording. Recording stops automatically at the tape counter zero point. Your camcorder returns to the standby mode.

Примечания
- Если еще раз нажать кнопку ZERO SET MEMORY до начала обратной перемотки ленты, то функция памяти нулевой отметки будет отменена.
- Между кодом времени и действительным временем может быть расхождение в несколько секунд.
- Функция памяти нулевой отметки может не работать в том случае, если имеется незаписанный участок между изображениями на ленте.

Функция ZERO SET MEMORY работает также в режиме готовности записи
При вставке эпизода в середину записанной ленты, нажмите кнопку ZERO SET MEMORY в том месте, где нужно закончить вставку эпизода. Перемотайте ленту к месту начала вставки эпизода и начните запись. Запись остановится автоматически в месте нулевой отметки счетчика. Видеокамера вернется в режим ожидания.

Searching the boundaries of recorded tape by title – Title search

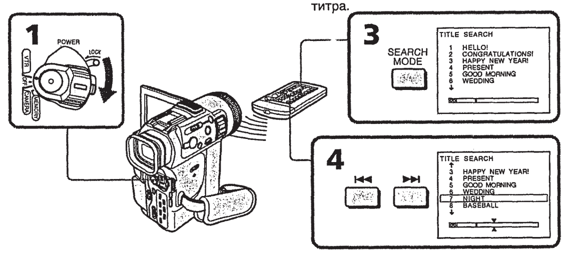
CM only If you use a tape with cassette memory, you can search for the boundaries of recorded tape by title **(Title search)**(p. 154). Use the Remote Commander for this operation.

(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in CM to ON in the menu settings (p. 98). Default setting is ON.
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the title search indicator appears.
The indicator changes as follows:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ⏮ or ⏭ on the Remote Commander to select the title for playback. Your camcorder automatically starts playback of the scene having the title that you selected.

Поиск границ записи на ленте по титру – Поиск титра

CM only При использовании ленты с кассетной памятью можно выполнить поиск границ записи на ленте по титру **(поиск титра)**(стр. 154). Для этой операции используйте пульт дистанционного управления.

(1) Установите переключатель POWER в положение VTR.
(2) Установите команду CM SEARCH в CM в положение ON в установках меню (стр. 98). Установкой по умолчанию является ON.
(3) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления неоднократно до тех пор, пока не появится индикатор поиска титра. Индикатор будет изменяться следующим образом:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикации
(4) Нажмите кнопку ⏮ или ⏭ на пульте дистанционного управления, чтобы выбрать титр для воспроизведения. Видеокамера автоматически начнет воспроизведение эпизода с выбранного титра.



To stop searching

Press ■.

If you use a tape without cassette memory
You cannot superimpose or search a title.

In the ▭ mark
- The bar in the ▭ mark indicates the present point on the tape.
- The ⧗ mark in the ▭ indicates the actual point you are trying to search.

If a tape has a blank portion between recorded portions
The title search function may not work correctly.

Для остановки поиска

Нажмите кнопку ■.

При использовании ленты без кассетной памяти
Невозможно выполнять наложение или поиск титра.

В индикаторе ▭
- Полоса в индикаторе ▭ указывает текущее место на ленте.
- Метка ⧗ в индикаторе ▭ указывает текущее место поиска.

Если на записанной ленте имеются незаписанные участки
Функция поиска титра может работать неправильно.

Searching a recording by date – Date search

You can automatically search for the point where the recording date changes and start playback from that point **(Date search)**. Use a tape with cassette memory for convenience. Use the Remote Commander for this operation.
Use this function to check where recording dates change or to edit the tape at each recording date.

Searching for the date by using cassette memory

You can use this function only when playing back a tape with cassette memory (p. 154).

(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in CM to ON in the menu settings (p. 98). Default setting is ON.
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
The indicator changes as follows:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ⏮ or ⏭ on the Remote Commander to select the date for playback. Your camcorder automatically starts playback at the beginning of the selected date.

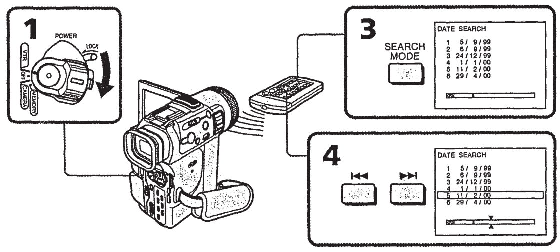
Поиск записи по дате – Поиск даты

Можно автоматически выполнять поиск места, где изменяется дата записи и начинать воспроизведение с этого места **(поиск даты)**. Пользуйтесь для удобства лентой с кассетной памятью. Для этой операции используйте пульт дистанционного управления.
Используйте эту функцию для проверки, где изменяются даты записи, или выполнения монтажа ленты в каждом месте даты записи.

Поиск даты с помощью кассетной памяти

Эту функцию можно использовать только при воспроизведении ленты с кассетной памятью (стр. 154).

(1) Установите переключатель POWER в положение VTR.
(2) Установите команду CM SEARCH в CM в положение ON в установках меню (стр. 98). Установкой по умолчанию является ON.
(3) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления неоднократно до тех пор, пока не появится индикатор поиска даты. Индикатор будет изменяться следующим образом:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикации
(4) Нажмите кнопку ⏮ или ⏭ на пульте дистанционного управления, чтобы выбрать дату для воспроизведения. Видеокамера автоматически начнет воспроизведение с выбранной даты.



To stop searching

Press ■.

Для остановки поиска

Нажмите кнопку ■.

Searching a recording by date – Date search

Note
If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

In the ▭ mark
- The bar in the ▭ mark indicates the present point on the tape.
- The ⧗ mark in the ▭ indicates the actual point you are trying to search.

If a tape has a blank portion between recorded portions
The date search function may not work correctly.

Cassette memory
The tape cassette memory can hold six recording date data. If you search the date among seven or more data, see "Searching for the date without using cassette memory" below.

Searching for the date without using cassette memory

(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in CM to OFF in the menu settings (p. 98). If using a tape without cassette memory, skip this step.
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ⏮ on the Remote Commander to search for the previous date or press ⏭ on the Remote Commander to search for the next date. Your camcorder automatically starts playback at the point where the date changes. Each time you press ⏮ or ⏭, your camcorder searches for the previous or next date.

To stop searching

Press ■.

Поиск записи по дате – Поиск даты

ПРИМЕЧАНИЕ
Если продолжительность записи в течение одного дня менее двух минут, видеокамера может не точно найти место, где дата записи изменяется.

В индикаторе ▭
- Полоса в индикаторе ▭ указывает текущее место на ленте.
- Метка ⧗ в индикаторе ▭ указывает текущее место поиска.

Если на записанной ленте имеются незаписанные участки
Функция поиска даты может работать неправильно.

Кассетная память
Кассетная память на ленте позволяет вместить до шести дат записи. Если выполняется поиск даты записи при наличии семи и более дат, см. раздел "Поиск даты без использования кассетной памяти".

Поиск даты без использования кассетной памяти

(1) Установите переключатель POWER в положение VTR.
(2) Установите команду CM SEARCH в CM в положение OFF в установках меню (стр. 98). При использовании ленты без кассетной памяти пропустите этот пункт.
(3) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления неоднократно до тех пор, пока не появится индикатор поиска даты. Индикатор будет изменяться следующим образом:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN t→ без индикации
(4) Нажмите кнопку ⏮ на пульте дистанционного управления для поиска предыдущей даты или нажмите кнопку ⏭ на пульте дистанционного управления для поиска следующей даты. Видеокамера автоматически начнет воспроизведение в том месте, где дата изменяется. Всякий раз при нажатии кнопки ⏮ или ⏭ видеокамера выполняет поиск предыдущей или следующей даты.

Для остановки поиска

Нажмите кнопку ■.

Searching for a photo – Photo search/Photo scan

You can search for a still picture you have recorded on a mini DV tape **(photo search)**. You can also search for still pictures one after another and display each picture for five seconds automatically regardless of cassette memory **(photo scan)**. Use the Remote Commander for these operations.
Use this function to check or edit still pictures.

Searching for a photo by using cassette memory

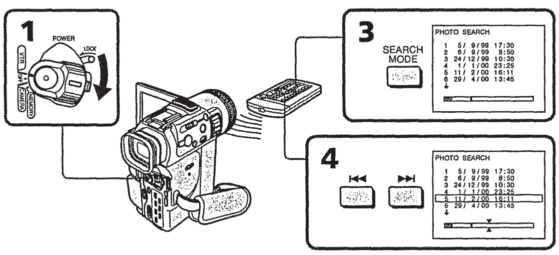
You can use this function only when playing back a tape with cassette memory (p. 154).
(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in CM to ON in the menu settings (p. 98). Default setting is ON.
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears.
The indicator changes as follows:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ⏮ or ⏭ on the Remote Commander to select the date for playback. Your camcorder automatically starts playback of the photo having the date that you selected.

Поиск фото – Фотопоиск/ Фотосканирование

Можно выполнить поиск неподвижного изображения, записанного на ленте DV **(фотопоиск)**.
Можно также выполнять поиск неподвижных изображений поочередно и отображать каждое из них в течение пяти секунд, независимо от кассетной памяти **(фотосканирование)**. Для этих операций используйте пульт дистанционного управления. Используйте эту функцию для проверки или монтажа неподвижных изображений.

Поиск фото без использования кассетной памяти

Эту функцию можно использовать только при воспроизведении ленты с кассетной памятью (стр. 154).
(1) Установите переключатель POWER в положение VTR.
(2) Установите команду CM SEARCH в CM в положение ON в установках меню (стр. 98). Установкой по умолчанию является ON.
(3) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления неоднократно до тех пор, пока не появится индикатор поиска фото. Индикатор будет изменяться следующим образом:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикации
(4) Нажмите кнопку ⏮ или ⏭ на пульте дистанционного управления, чтобы выбрать дату для воспроизведения. Видеокамера автоматически начнет воспроизведение фото с выбранной даты.



To stop searching
Press ■.

In the ▭ mark

- The bar in the ▭ mark indicates the present point on the tape.
- The ⧗ mark in the ▭ indicates the actual point you are trying to search.

If a tape has a blank portion between recorded portions
The photo search function may not work correctly.

The available number of photos that can be searched using the cassette memory
The available number is up to 12 photos. However, you can search 13 photos or more using the scanning photo function.

Searching for a photo without using cassette memory

(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in CM to OFF in the menu settings (p. 98).
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ⏮ or ⏭ on the Remote Commander to select the photo for playback. Each time you press ⏮ or ⏭, your camcorder searches for the previous or next photo.
Your camcorder automatically starts playback of the photo.

To stop searching
Press ■.

Для остановки поиска
Нажмите кнопку ■.

В индикаторе ▭

- Полоса в индикаторе ▭ указывает текущее место на ленте.
- Метка ⧗ в индикаторе ▭ указывает текущее место поиска.

Если на записанной ленте имеются незаписанные участки
Функция фотопоиска может работать неправильно.

Доступное количество фото для поиска с помощью кассетной памяти
Доступное количество - максимум 12 фото. Однако можно выполнять поиск 13 и более фото с помощью функции фотосканирования.

Поиск фото без использования кассетной памяти

(1) Установите переключатель POWER в положение VTR.
(2) Установите команду CM SEARCH в CM в положение OFF в установках меню (стр. 98).
(3) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления неоднократно до тех пор, пока не появится индикатор поиска фото.
Индикатор будет изменяться следующим образом:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикации
(4) Нажмите кнопку ⏮ или ⏭ на пульте дистанционного управления, чтобы выбрать фото для воспроизведения. Всякий раз при нажатии кнопки ⏮ или ⏭ видеокамера выполняет поиск предыдущего или следующего фото.
Видеокамера автоматически начнет воспроизведение фото.

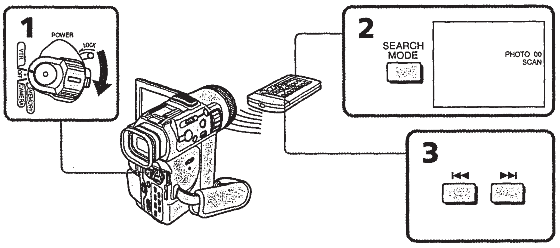
Для остановки поиска
Нажмите кнопку ■.

Scanning photo

(1) Set the POWER switch to VTR.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo scan indicator appears.
The indicator changes as follows:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(3) Press ⏮ or ⏭ on the Remote Commander.
Each photo is played back for about five seconds automatically.

Сканирование фото

(1) Установите переключатель POWER в положение VTR.
(2) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления неоднократно до тех пор, пока не появится индикатор поиска фотосканирования.
Индикатор будет изменяться следующим образом:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикации
(3) Нажмите кнопку ⏮ или ⏭ на пульте дистанционного управления.
Каждое фото будет автоматически отображаться в течении приблизительно пяти секунд.



To stop scanning
Press ■.

Для остановки сканирования
Нажмите кнопку ■.

— Editing —

Dubbing a tape

Using the A/V connecting cable
Connect your camcorder to the VCR using the A/V connecting cable supplied with your camcorder.
Set the input selector on the VCR to LINE, if available.

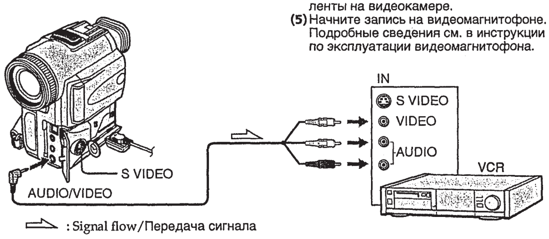
(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the input selector on the VCR to LINE. For details, refer to the operating instructions of the VCR.
(3) Set the POWER switch to VTR.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR. For details, refer to the operating instructions of the VCR.

– Монтаж –

Перезапись ленты

Использование соединительного кабеля аудио/видео
Подсоедините видеокамеру к видеомагнитофону с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере.
Установите селектор входного сигнала на видеомагнитофоне в положение LINE, если таковое имеется.

(1) Вставьте незаписанную ленту (или ленту, на которую нужно выполнить запись) в видеомагнитофон, а записанную ленту - в видеокамеру.
(2) Установите селектор входного сигнала на видеомагнитофоне в положение LINE. Подробные сведения см. в инструкции по эксплуатации видеомагнитофона.
(3) Установите переключатель POWER в положение VTR.
(4) Начните воспроизведение записанной ленты на видеокамере.
(5) Начните запись на видеомагнитофоне. Подробные сведения см. в инструкции по эксплуатации видеомагнитофона.



⇨ : Signal flow/Передача сигнала

When you have finished dubbing a tape
Press ■ on both your camcorder and the VCR.

Before a dubbing
Set DISPLAY to LCD in the menu settings. (Default setting is LCD.)

Be sure to clear the indicators from the screen
If they are displayed, press the following buttons not to record the indicators on the dubbed tape:

- The DISPLAY button
- The DATA CODE button on the Remote Commander
- The SEARCH MODE button on the Remote Commander

Когда перезапись ленты закончена
Нажмите кнопку ■ на видеокамере и на видеомагнитофоне.

Перед перезаписью
Установите параметр DISPLAY в положение LCD в установках меню. (Установкой по умолчанию является ЖКД.)

Обязательно отключите индикаторы на экране
Если они отображаются, нажмите следующие кнопки, чтобы не записывать индикаторы на перезаписываемую ленту:

- Кнопка DISPLAY
- Кнопка DATA CODE на пульте дистанционного управления
- Кнопка SEARCH MODE на пульте дистанционного управления

You can edit on VCRs that support the following systems
8 8 mm, **Hi8** Hi8, **D** Digital8, **VHS** VHS, **S-VHS** S-VHS, **VHS-C** VHSC, **S-VHS-C** S-VHSC, **B** Betamax, **MiniDV** mini DV or **DV** DV

If your VCR is a monaural type
Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and the red plug is connected, the right channel audio is output.

Connect using an S video cable (not supplied) to obtain high-quality pictures
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (not supplied) to the S video jacks of both your camcorder and the VCR.
This connection produces higher quality DV format pictures.

Using the i.LINK cable (DV connecting cable)
Simply connect the i.LINK cable (DV connecting cable) (not supplied) to i DV IN/OUT and to DV IN/OUT of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You cannot dub the titles, display indicators or the contents of cassette memory.
Set the input selector on the VCR to the DV input position if the VCR is equipped with the input selector.

Монтаж можно выполнять на видеомагнитофонах, которые поддерживают следующие системы
8 8 мм, **Hi8** Hi8, **D** Digital8, **VHS** VHS, **S-VHS** S-VHS, **VHS-C** VHSC, **S-VHS-C** S-VHSC, **B** Betamax, **MiniDV** мини DV или **DV** DV

Если видеомагнитофон монофонического типа
Подсоедините желтый штекер соединительного кабеля аудио/видео к входному гнезду видеосигнала, а белый или красный штекер к входному гнезду аудиосигнала на видеомагнитофоне или телевизоре. Если подсоединен белый штекер, то звук будет выводиться на левый канал, а если красный - то на правый.

Соединение с помощью видеокабеля S (не входит в комплект) для получения высококачественных изображений
При таком соединении не понадобится подсоединять желтый штекер (видео) соединительного кабеля аудио/видео.
Подсоедините видеокабель S (не входит в комплект) к видеогнездам S на видеокамере и видеомагнитофоне.
Это соединение позволяет получить высококачественное изображение формата DV.

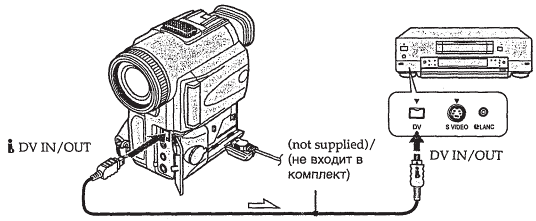
Использование кабеля i.LINK (соединительный кабель DV)
Просто подсоедините кабель i.LINK (соединительный кабель DV) (не входит в комплект) к гнезду i DV IN/OUT и гнезду DV IN/OUT аппаратов DV. С помощью цифрового соединения видео- и аудиосигналы передаются в цифровом виде для последующего высококачественного монтажа. Титры, индикаторы на дисплее или содержание кассетной памяти перезаписывать невозможно.
Установите селектор входного сигнала на видеомагнитофоне в положение входа DV, если таковой имеется на видеомагнитофоне.

Dubbing a tape

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the POWER switch to VTR.
(3) Play back the recorded tape on your camcorder.
(4) Start recording on the VCR.

Перезапись ленты

(1) Вставьте незаписанную ленту (или ленту, на которую нужно выполнить запись) в видеомагнитофон, а записанную ленту - в видеокамеру.
(2) Установите переключатель POWER в положение VTR.
(3) Начните воспроизведение записанной ленты на видеокамере.
(4) Начните запись на видеомагнитофоне.



⇨ : Signal flow/Передача сигнала

When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Когда перезапись ленты закончена

Нажмите кнопку ■ на видеокамере и на видеомагнитофоне.

You can connect one VCR only using the i.LINK cable (DV connecting cable)

Pictures processed by the digital effect function
Pictures processed by the digital effect function are not output through the i DV IN/OUT jack.

If you record a playback pause picture with the i DV IN/OUT jack
The recorded picture becomes rough. And when you play back the picture using the other video equipment, the picture may jitter.

С помощью кабеля i.LINK (соединительный кабель DV) можно подсоединить только один видеомагнитофон

Изображения, видоизмененные с помощью функции цифровых эффектов
Изображения, видоизмененные с помощью функции цифровых эффектов, не передаются через гнездо входа/выхода i DV IN/OUT.

При записи неподвижного изображения с помощью гнезда i DV IN/OUT
Записываемое изображение становится неровным. При воспроизведении изображения на другой видеоаппаратуре оно может дрожать.

Editing partially on a DV tape – DV synchro-editing

By simply selecting the scenes to edit, you can duplicate the desired portion on a tape, using other equipment connected with an i.LINK cable (DV connecting cable) (not supplied).
The scenes can be selected by frame. You can also use the Remote Commander for this operation. Since your camcorder exchanges digital signals, you can edit with little audio and video deterioration.
You cannot duplicate titles, display indicators, or the contents of cassette memory.
The connection is the same as on page 72.

Монтаж по частям на ленту DV – Синхронный монтаж DV

Выбирая эпизоды для монтажа, можно выполнять перезапись нужных участков на ленту, используя другую аппаратуру, подсоединенную с помощью кабеля i.LINK (соединительный кабель DV) (не входит в комплект). Эпизоды можно выбирать по кадрам. Для этой операции можно также использовать пульт дистанционного управления. Так как видеокамера обменивается цифровыми сигналами, монтаж можно выполнять лишь с незначительным ухудшением звука и видеоизображений.
Титры, индикаторы на дисплее или содержание кассетной памяти перезаписывать невозможно.
Данное соединение аналогично описанному на стр. 72.

Editing partially on a DV tape – DV synchro-editing

Preparing the editing
(1) Insert a recorded tape into your camcorder and insert a blank tape (or a tape you want to record over) into the DV product.
(2) Connect your camcorder to the DV product with an i.LINK cable (DV connecting cable).
(3) Set the POWER switch on your camcorder to VTR.
(4) Set the input selector to DV input on the DV product. If the DV product is another DV camcorder, set its POWER switch to VTR.
(5) Press MENU to display the menu.
(6) Turn the SEL/PUSH EXEC dial to select ETC, then press the dial.
(7) Turn the SEL/PUSH EXEC dial to select DV EDITING, then press the dial.

Setting the editing in point
(8) Using the video control buttons, locate the point where you want to start editing, then press ❚❚ to set your camcorder in the playback pause mode (p. 187).
(9) Press the SEL/PUSH EXEC dial or MARK on the Remote Commander to set DV EDITING IN.

Setting the editing out point and starting the editing
(10) Using the video control buttons, locate the point where you want to end editing, then press ❚❚ to set your camcorder in the playback pause mode.
(11) Press the SEL/PUSH EXEC dial or MARK on the Remote Commander to set DV EDITING OUT. Once the editing process starts, the display changes from "STBY" to "●EDITING." When the process ends, your camcorder and the DV product automatically set to pause mode.

Монтаж по частям на ленту DV – Синхронный монтаж DV

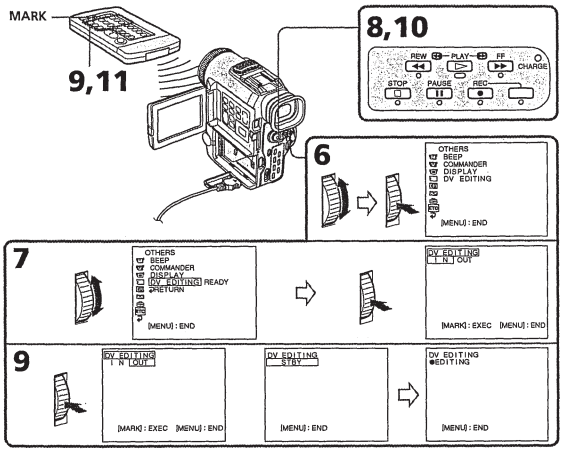
Подготовка к монтажу
(1) Вставьте записанную ленту в видеокамеру и незаписанную ленту (или ленту, которую нужно перезаписать) в аппарат DV.
(2) Подсоедините видеокамеру к аппарату DV с помощью кабеля i.LINK (соединительный кабель DV).
(3) Установите переключатель POWER на видеокамере в положение VTR.
(4) Установите селектор входного сигнала в положение входа DV на аппарате DV. Если аппарат DV - это другая видеокамера DV, установите ее переключатель POWER в положение VTR.
(5) Нажмите кнопку MENU для отображения меню.
(6) Поверните диск SEL/PUSH EXEC для выбора ETC, затем нажмите на диск.
(7) Поверните диск SEL/PUSH EXEC для выбора DV EDITING, затем нажмите на диск.

Установка места начала монтажа
(8) С помощью кнопок видеоконтроля найдите место, где нужно начать монтаж, затем нажмите кнопку ❚❚ для установки видеокамеры в режим паузы воспроизведения (стр. 187).
(9) Нажмите диск SEL/PUSH EXEC или MARK на пульте дистанционного управления для установки DV EDITING IN.

Установка места окончания монтажа и начало монтажа
(10) С помощью кнопок видеоконтроля найдите место, где нужно закончить монтаж, затем нажмите кнопку ❚❚ для установки видеокамеры в режим паузы воспроизведения
(11) Нажмите диск SEL/PUSH EXEC или MARK на пульте дистанционного управления для установки DV EDITING OUT. После начала монтажа индикация на дисплее изменится с "STBY" на "●EDITING." После окончания монтажа видеокамера и аппарат DV будут автоматически установлены в режим паузы.

Editing partially on a DV tape – DV synchro-editing

Монтаж по частям на ленту DV – Синхронный монтаж DV



Notes
- If you use other than Sony equipment with the i DV jack, you cannot perform DV synchro-editing.
- If a tape has a blank portion between recorded portions, DV synchro-editing may not work correctly.

Errors in duplicating
If you connect your camcorder to Sony equipment with the DV jack, the range of errors is within +/– 5 frames.
The range may become wider in the following conditions:
- The interval between DV EDITING IN and OUT is less than five seconds.
- DV EDITING IN or OUT is set at the beginning of the tape.

Примечания
- При использовании аппаратуры с гнездом i DV других фирм (не Sony) невозможно выполнять синхронный монтаж DV.
- При использовании ленты с незаписанными участками между записанными фрагментами DV функция синхронного монтажа может работать неправильно.

Ошибки при перезаписи
При подсоединении видеокамеры к аппаратуре Sony с гнездом DV диапазон ошибок будет в пределах +/– 5 кадров.
Диапазон может быть шире при следующих условиях:
- Интервал между установками DV EDITING IN и OUT менее пяти секунд.
- Установка DV EDITING IN или OUT выполнена в начале ленты.

If you do not make connections with the i.LINK cable (DV connecting cable)
The screen shows NOT READY, and you cannot select DV EDITING.

On a blank portion of the tape
You cannot set DV EDITING IN or OUT.

Если соединение выполняется без кабеля i.LINK (соединительный кабель DV)
На экране появится индикация NOT READY, и установку DV EDITING будет невозможно выбрать.

На незаписанном участке ленты
Установку DV EDITING IN или OUT выполнить невозможно.

Recording video or TV programmes

Using the A/V connecting cable

You can record a tape from another VCR or a TV programme from a TV that has video/audio outputs. Use your camcorder as a recorder.

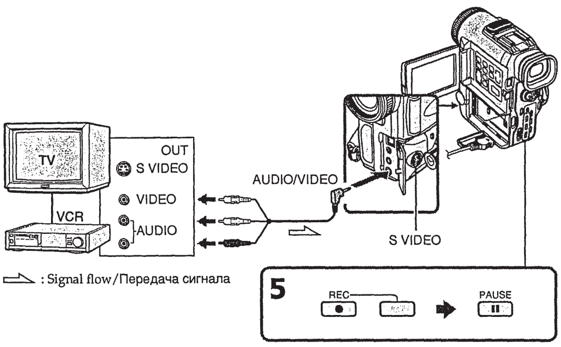
(1) Insert a blank tape (or a tape you want to record over) into your camcorder. If you are recording a tape from the VCR, insert a recorded tape into the VCR.
(2) Set the POWER switch to VTR on your camcorder.
(3) Set DISPLAY in ETC to LCD in the menu settings (p. 98).
(4) Press MENU to erase the menu display.
(5) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❙❙ on your camcorder.
(6) Press ► on the VCR to start playback if you record a tape from a VCR. Select a TV programme if you record from a TV. The picture from a TV or VCR appears on the LCD screen or in the viewfinder.
(7) Press ❙❙ on your camcorder at the scene where you want to start recording from.

Запись видео или телепрограмм

Использование соединительного кабеля аудио/видео

Можно выполнить запись ленты с другого видеомагнитофона или телевизионной программы с телевизора, которые имеют видео/аудио выходы. Используйте видеокамеру в качестве записывающего устройства.

(1) Вставьте незаписанную ленту (или ленту, на которую нужно выполнить запись) в видеокамеру. При записи ленты с видеомагнитофона вставьте записанную ленту в видеомагнитофон.
(2) Установите переключатель POWER на видеокамере в положение VTR.
(3) Установите параметр DISPLAY в ETC в положение LCD в установках меню (стр. 98).
(4) Нажмите кнопку MENU для удаления индикации меню.
(5) Одновременно нажмите кнопку ● REC и кнопку справа от нее на видеокамере, затем сразу нажмите кнопку ❙❙ на видеокамере.
(6) Нажмите кнопку ► на видеомагнитофоне для начала воспроизведения, запись выполняется с видеомагнитофона. Выберите телевизионную программу, если запись выполняется с телевизора. Изображение с телевизора или видеомагнитофона появится на экране ЖКД или в видоискателе.
(7) Нажмите ❙❙ на видеокамере в том месте, где нужно начать запись.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Using the Remote Commander

In step 5, press ● REC and MARK simultaneously, then immediately press ❙❙. And in step 7, press ❙❙ at the scene where you want to start recording from.

If your VCR is a monaural type
Connect the yellow plug of the A/V connecting cable to the video output jack and the white or the red plug to the audio output jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and the red plug is connected, the right channel audio is output.

Connect using an S video cable (not supplied) to obtain high-quality pictures
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (not supplied) to the S (S1) video jacks of both your camcorder and the VCR.
This connection produces higher quality DV format pictures.

Когда перезапись ленты закончена

Нажмите кнопку ■ на видеокамере и на видеомагнитофоне.

Использование пульта дистанционного управления

В пункте 5 выше одновременно нажмите кнопку ● REC и кнопку MARK, затем сразу нажмите кнопку ❙❙. В пункте 7 нажмите кнопку ❙❙ в том месте, где нужно начать запись.

Если видеомагнитофон монофонического типа
Подсоедините желтый штекер соединительного кабеля аудио/видео к выходному гнезду видеосигнала, а белый или красный штекер к выходному гнезду аудиосигнала на видеомагнитофоне или телевизоре. Если подсоединен белый штекер, то звук будет выводиться на левый канал, а если красный - то на правый.

Соединение с помощью видеокабеля S (не входит в комплект) для получения высококачественных изображений
При таком соединении не понадобится подсоединять желтый штекер (видео) соединительного кабеля аудио/видео.
Подсоедините видеокабель S (не входит в комплект) к видеогнездам S (S1) на видеокамере и видеомагнитофоне.
Это соединение позволяет получить высококачественное изображение формата DV.

Using the i.LINK cable (DV connecting cable)

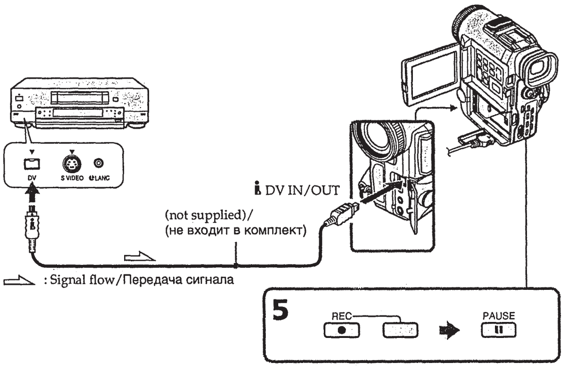
Simply connect the i.LINK cable (DV connecting cable) (not supplied) to i DV IN/OUT and to DV IN/OUT of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

(1) Insert a blank tape (or a tape you want to record over) into your camcorder, and insert the recorded tape into the VCR.
(2) Set the POWER switch to VTR.
(3) Set DISPLAY in ETC to LCD in the menu settings (p. 98).
(4) Press MENU to erase the menu display.
(5) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❙❙ on your camcorder.
(6) Press ► on the VCR to start playback. The picture to be recorded appears on the LCD screen or in the viewfinder.
(7) Press ❙❙ on your camcorder at the scene where you want to start recording from.

Использование кабеля i.LINK (соединительный кабель DV)

Просто подсоедините кабель i.LINK (соединительный кабель DV) (не входит в комплект) к гнезду i DV IN/OUT и гнезду DV IN/OUT аппаратов DV. С помощью цифрового соединения видео- и аудиосигналы передаются в цифровом виде для последующего высококачественного монтажа.

(1) Вставьте незаписанную ленту (или ленту, на которую нужно выполнить запись) в видеокамеру, а записанную ленту - в видеомагнитофон.
(2) Установите переключатель POWER в положение VTR.
(3) Установите параметр DISPLAY в ETC в положение LCD в установках меню (стр. 98).
(4) Нажмите кнопку MENU для удаления индикации меню.
(5) Одновременно нажмите кнопку ● REC и кнопку справа от нее на видеокамере, затем сразу нажмите кнопку ❙❙ на видеокамере.
(6) Нажмите кнопку ► на видеомагнитофоне для начала воспроизведения. Записываемое изображение появится на экране ЖКД или в видоискателе.
(7) Нажмите ❙❙ на видеокамере в том месте, где нужно начать запись.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Using the Remote Commander

In step 5, press ● REC and MARK simultaneously, then immediately press ❚❚. And in step 7, press ❚❚ at the scene where you want to start recording from.

You can connect one VCR only using the i.LINK cable (DV connecting cable)

When you dub a picture in digital form
The colour of the display may be uneven. However this does not affect the dubbed picture.

If you record playback pause picture with the i DV IN/OUT jack
The recorded picture becomes rough. And when you play back the picture using your camcorder, the picture may jitter.

Before recording
Make sure if the DV IN indicator appears on the LCD screen or in the viewfinder. The DV IN indicator may appear on both equipment.

Когда перезапись ленты закончена

Нажмите кнопку ■ на видеокамере и на видеомагнитофоне.

Использование пульта дистанционного управления

В пункте 5 выше одновременно нажмите кнопку ● REC и кнопку MARK, затем сразу нажмите кнопку ❚❚. В пункте 7 нажмите кнопку ❚❚ в том месте, где нужно начать запись.

С помощью кабеля i.LINK (соединительный кабель DV) можно подсоединить только один видеомагнитофон

При перезаписи изображения в цифровом виде
Цвет изображения может быть необычным. Однако он не влияет на перезапись изображения.

При записи неподвижного изображения с помощью гнезда i DV IN/OUT
Записываемое изображение становится неровным. При воспроизведении изображения на данной видеокамере оно может дрожать.

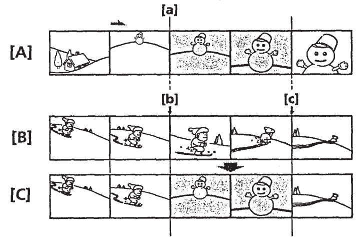
Перед записью
Убедитесь, что на экране ЖКД и в видоискателе появился индикатор DV IN. Индикатор DV IN может появиться на обоих аппаратах.

Inserting a scene from a VCR – Insert editing

You can insert a new scene from a VCR onto your originally recorded tape by specifying the insert start and end points. Use the Remote Commander for this operation. Connections are the same as on page 72 or 77.
Insert a cassette containing the desired scene to insert into the VCR.

Вставка эпизода с видеомагнитофона – Монтаж вставки

Можно вставить новый эпизод с видеомагнитофона на уже записанную ленту, указав места его начала и окончания. Для этой операции используйте пульт дистанционного управления. Данные соединения аналогичны описанным на стр. 72 или 77.
Вставьте кассету с необходимым эпизодом для вставки в видеомагнитофон.



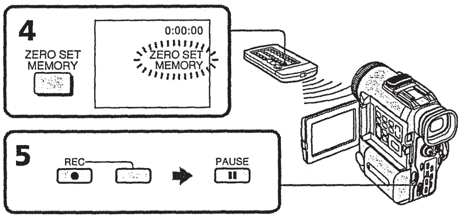
[A]: A tape that contains the scene to be superimposed
[B]: A tape before editing
[C]: A tape after editing

[A]: Лента, содержащая эпизод для наложения
[B]: Лента перед монтажом
[C]: Лента после монтажа

Editing/Монтаж

(1) Set the POWER switch to VTR.
(2) On the VCR, locate just before the insert start point **[a]**, then press ❚❚ to set the VCR to the playback pause mode.
(3) On your camcorder, locate the insert end point **[c]** by pressing ◀◀ or ▶▶. Then press ❚❚ to set it to the playback pause mode.
(4) Press ZERO SET MEMORY on the Remote Commander. The ZERO SET MEMORY indicator flashes and the end point of the insert is stored in memory. The tape counter shows "0:00:00."
(5) On your camcorder, locate the insert start point **[b]** by pressing ◀◀, then press ● REC and the button on its right simultaneously, then immediately press ❚❚ on your camcorder.
(6) First press ❚❚ on the VCR, and after a few seconds press ❚❚ on your camcorder to start inserting the new scene.
Inserting automatically stops near the zero point on the tape counter. Your camcorder automatically returns to the recording pause mode.

(1) Установите переключатель POWER в положение VTR.
(2) На видеомагнитофоне найдите место, где будет вставлен эпизод **[a]**, затем нажмите кнопку ❚❚ для установки видеомагнитофона в режим паузы воспроизведения.
(3) На видеокамере найдите конец вставляемого эпизода **[c]**, нажав кнопку ◀◀ или ▶▶. Затем нажмите кнопку ❚❚ для установки ее в режим паузы воспроизведения.
(4) Нажмите кнопку ZERO SET MEMORY на пульте дистанционного управления. Индикатор ZERO SET MEMORY начнет мигать, а место окончания вставки будет сохранено в памяти. Показание счетчика станет равным "0:00:00."
(5) На видеокамере найдите место начала вставляемого эпизода **[b]**, нажав кнопку ◀◀, затем одновременно нажмите кнопку ● REC и кнопку справа от нее и сразу нажмите кнопку ❚❚ на видеокамере.
(6) Сначала нажмите кнопку ❚❚ на видеомагнитофоне и спустя несколько секунд кнопку ❚❚ на видеокамере для начала вставки новой сцены.
Вставка остановится автоматически в месте нулевой отметки счетчика. Видеокамера автоматически вернется в режим паузы записи.



To change the insert end point

Press ZERO SET MEMORY on the Remote Commander again after step 5 to erase the ZERO SET MEMORY indicator and begin from step 3.

Using the Remote Commander

In step 5, press ● REC and MARK simultaneously, then immediately press ❚❚. And in step 6, press ❚❚ at the scene where you want to start recording from.

Note
The picture and sound recorded on the portion between the insert start and end points will be erased when you insert the new scene.

If you insert scenes on the tape recorded with other camcorder (including other DCR-PC100E)
The picture and sound may be distorted. We recommend that you insert scenes on a tape recorded with your camcorder.

When the inserted picture is played back
The picture and sound may be distorted at the end of the inserted portion. This is not a malfunction.
The picture and sound at the start point and the end point may be distorted in the LP mode.

To insert a scene without setting the insert end point
Skip steps 3 and 4. Press ■ when you want to stop inserting.

Для изменения места окончания вставки

Снова нажмите кнопку ZERO SET MEMORY на пульте дистанционного управления после пункта 5 для удаления индикатора ZERO SET MEMORY и начните с пункта 3.

Использование пульта дистанционного управления

В пункте 5 выше одновременно нажмите кнопку ● REC и кнопку MARK, затем сразу нажмите кнопку ❚❚. В пункте 6 нажмите кнопку ❚❚ в том месте, где нужно начать запись.

Примечание
Изображение и звук, записанные на ленте между местами начала и окончания вставки, будут стерты при вставке нового эпизода.

При вставке эпизодов на ленту, записанную на другой видеокамере (включая другие модели DCR-PC100E)
Изображение и звук могут искажаться. Рекомендуется вставлять эпизоды на пленку, записанную с помощью данной видеокамеры.

При воспроизведении вставленного изображения
Изображение и звук могут искажаться в конце вставленного эпизода. Однако это не является неполадкой.
Изображение и звук в режиме LP могут искажаться в начале и конце вставленного эпизода.

Для вставки эпизода без указания места окончания вставки
Пропустите пункты 3 и 4. Нажмите кнопку ■, когда нужно остановить вставку.

Editing/Монтаж

Audio dubbing

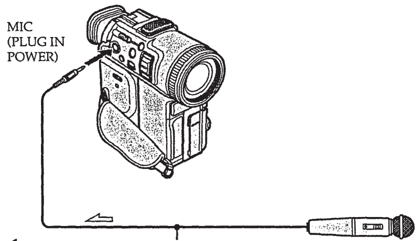
Аудиоперезапись

You can record an audio sound to add to the original sound on a tape by connecting audio equipment or a microphone. If you connect the audio equipment, you can add sound to your recorded tape by specifying starting and ending points. The original sound will not be erased.
Use the Remote Commander for this operation.

Можно записать аудиосигнал в дополнение к первоначальному звуку на ленте, подсоединив аудиоаппаратуру или микрофон. Если подсоединена аудиоаппаратура, то можно добавить звук на записанную ленту, указав места начала и окончания. При этом первоначальный звук останется.
Для этой операции используйте пульт дистанционного управления.

Connecting the microphone with the MIC jack

Подсоединение микрофона с помощью гнезда MIC

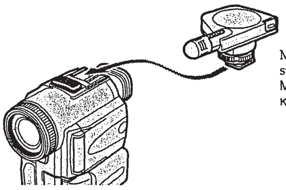


: Signal flow/ Передача сигнала

Microphone (not supplied)/ Микрофон (не входит в комплект)

Connecting the microphone with the intelligent accessory shoe

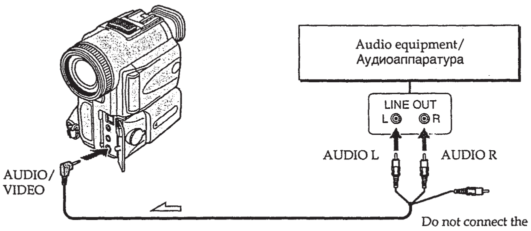
Подсоединение микрофона с помощью держателя для вспомогательных принадлежностей



Microphone (not supplied)/ Микрофон (не входит в комплект)

Dubbing with the AUDIO/ VIDEO jack

Перезапись с помощью гнезда AUDIO/VIDEO



: Signal flow/Передача сигнала

Do not connect the video (yellow) plug./ Не подсоединяйте видео (желтый) штекер.

Dubbing with the built-in microphone

No connection is necessary.

Перезапись с помощью встроенных микрофонов

Соединения не требуются.

Notes

- When dubbing with the AUDIO/VIDEO jack, you can check the recorded picture on the LCD screen or in the viewfinder, and can check the recorded sound by using a speaker or headphones.
- When dubbing with the built-in microphone or an external one, you can check the recorded picture on the LCD screen, in the viewfinder, or on the screen of equipment connected with the S VIDEO jack, and can check the recorded sound by using headphones.

Примечания

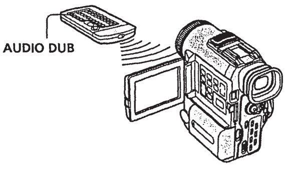
- При перезаписи с помощью гнезда AUDIO/ VIDEO можно проверять записываемое изображение на экране ЖКД или в видоискателе, а также записываемый звук с помощью громкоговорителя или головных телефонов.
- При перезаписи с использованием встроенного или внешнего микрофона можно проверять записываемое изображение на экране ЖКД, в видоискателе или на экране аппаратуры, подключенной с помощью гнезда S VIDEO, а также записываемый звук, используя головные телефоны.

Adding an audio sound on a recorded tape

(1) Insert the recorded tape into your camcorder.
(2) Set the POWER switch to VTR on your camcorder.
(3) Locate the recording start point by pressing ► on the Remote Commander. Then press **II** at the point where you want to start recording to set your camcorder to the playback pause mode.
(4) Press AUDIO DUB on the Remote Commander. The green ⊖ **II** indicator appears on the LCD screen or in the viewfinder.
(5) Press **II** on the camcorder or on the Remote Commander and start playing back the audio you want to record at the same time. The new sound is recorded in stereo 2 (ST2) during playback.
(6) Press ■ at the point where you want to stop recording.

Добавление звукового сигнала на записанную ленту

(1) Вставьте записанную ленту в видеокамеру.
(2) Установите переключатель POWER на видеокамере в положение VTR.
(3) Найдите место начала записи, нажав кнопку ► на пульте дистанционного управления. Затем нажмите кнопку **II** в том месте, где нужно начать запись, для установки видеокамеры в режим паузы воспроизведения.
(4) Нажмите кнопку AUDIO DUB на пульте дистанционного управления. Зеленый индикатор ⊖ **II** появится на экране ЖКД или в видоискателе.
(5) Нажмите кнопку **II** на видеокамере или на пульте дистанционного управления и одновременно начните воспроизведение звука, который нужно записать. Новый звук будет записан в режиме стерео 2 (ST2) во время воспроизведения.
(6) Нажмите кнопку ■ в том месте, где нужно закончить запись.



Monitoring the new recorded sound

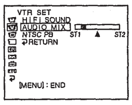
To play back the sound

Adjust the balance between the original sound (ST1) and the new sound (ST2) by selecting AUDIO MIX in the menu settings (p. 98).

Контроль вновь записываемого звука

Для воспроизведения звука

Отрегулируйте баланс между первоначальным звуком (ST1) и новым звуком (ST2), выбрав команду AUDIO MIX в установках меню (стр. 98).



Five minutes after when you disconnect the power source or remove the battery pack, the setting of AUDIO MIX returns to the original sound (ST1) only. The default setting is original sound only.

Через пять минут после отсоединения источника питания или извлечения батарейного блока установка AUDIO MIX вернется к первоначальному звуку (ST1). Установкой по умолчанию является только первоначальный звук.

Notes

- New sound cannot be recorded on a tape already recorded in the 16-bit mode (32 kHz, 44.1 kHz or 48 kHz) (p. 103).
- New sound cannot be recorded on a tape already recorded in the LP mode.
- You cannot add audio with the ⅰ DV IN/ OUT jack.

If you make all the connections
The audio input to be recorded will take precedence over others in the following order.
- MIC (PLUG IN POWER) jack
- Intelligent accessory shoe
- AUDIO/VIDEO jack
- Built-in microphone

If an i.LINK cable (DV connecting cable) (not supplied) is connected to your camcorder
You cannot add a sound to a recorded tape.

If you set the write-protect tab of the tape to lock
You cannot record on a tape. Slide the write-protect tab to release the write protection.

Примечания

- Новый звук нельзя записать на ленту, записанную в 16-битовом режиме (32 кГц, 44,1 кГц или 48 кГц) (стр. 110).
- Новый звук нельзя записать на ленту, записанную в режиме LP.
- Нельзя добавить звук через гнездо ⅰ DV IN/OUT.

Если все подсоединено
Записываемый входной звук будет иметь приоритет над другими звуками в следующей последовательности.
- Гнездо MIC (PLUG IN POWER)
- Держатель для вспомогательных принадлежностей
- Гнездо AUDIO/VIDEO
- Встроенный микрофон

Если к видеокамере подсоединен кабель i.LINK (соединительный кабель DV) (не входит в комплект)
Нельзя добавить звук на записанную ленту.

Если защитный лепесток установлен в положение защиты от записи
Нельзя записывать на ленту. Передвиньте лепесток защиты записи для отключения защиты.

Audio dubbing

We recommend that you add new sound on a tape recorded with your camcorder
If you add new sound on a tape recorded with another camcorder (including other DCR-PC100E), the sound quality may become worse.

To add new sound more precisely
Press ZERO SET MEMORY on the Remote Commander at the point where you want to stop recording later in the playback mode. Carry out steps 3 to 5. Recording automatically stops at the point where ZERO SET MEMORY was pressed.

On blank portions
You cannot add an audio.

Аудиоперезапись

Рекомендуется добавлять новый звук на пленку, записанную с помощью данной видеокамеры
При добавлении нового звука на ленту, записанную с помощью другой видеокамеры (включая другие модели DCR-PC100E), качество звука может ухудшиться.

Для более точного добавления нового звука
Нажмите кнопку ZERO SET MEMORY на пульте дистанционного управления в том месте, где нужно закончить запись позже в режиме воспроизведения.
Выполните пункты с 3 по 5. Запись автоматически останавливается в том месте, где будет нажата кнопка ZERO SET MEMORY.

На незаписанные участки
Невозможно добавлять звук.

Superimposing a title

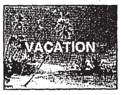
CM only If you use a tape with cassette memory, you can superimpose the title while recording or after recording. When you play back the tape, the title is displayed for five seconds from the point where you superimposed it.

You can select one of eight preset titles and two custom titles (p. 94).

Наложение титра

CM only При использовании ленты с кассетной памятью можно выполнять наложение титра во время или после записи. При воспроизведении ленты титр будет отображаться в течение пяти секунд с места его наложения.

Можно выбрать один из восьми предварительно установленных титров и двух собственных титров (стр. 94).



You can also select the colour, size and position of titles./
Можно также выбирать цвет, размер и положение титров.

Superimposing a title

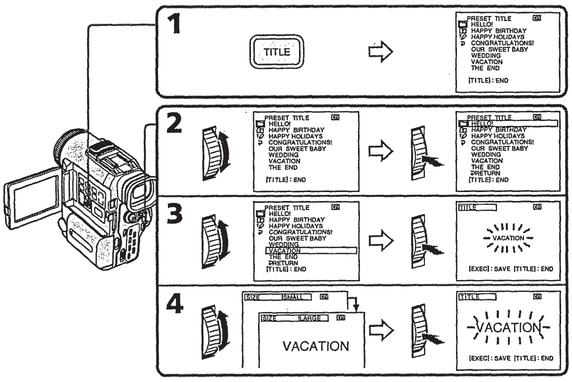
(1) Press TITLE to display the title menu in the standby/recording/playback/playback pause mode.
(2) Turn the SEL/PUSH EXEC dial to select 🗀, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select the desired title, then press the dial. The title is flashing.
(4) Change the colour, size, or position, if necessary.
  ① Turn the SEL/PUSH EXEC dial to select the COLOUR, SIZE, or POSITION, then press the dial. The item appears.
  ② Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
  ③ Repeat steps 1 and 2 until the title is laid out as desired.
(5) Press the SEL/PUSH EXEC dial again to complete the setting.
In the playback, playback pause or recording mode:
The "TITLE SAVE" indicator appears on the screen for five seconds and the title is set.
In the standby mode:
The "TITLE" indicator appears. And when you press START/STOP to start recording, "TITLE SAVE" appears on the screen for five seconds and the title is set.

Наложение титра

(1) Нажмите кнопку TITLE для отображения меню титров в режиме ожидания/записи/воспроизведения/паузы воспроизведения.
(2) Поверните диск SEL/PUSH EXEC для выбора 🗀, затем нажмите на диск.
(3) Поверните диск SEL/PUSH EXEC для выбора нужного титра, затем нажмите на диск. Титр начнет мигать.
(4) При необходимости измените установки цвета, размера или положения.
  ① Поверните диск SEL/PUSH EXEC для выбора установки COLOUR, SIZE или POSITION, затем нажмите на диск.
  ② Поверните диск SEL/PUSH EXEC для выбора нужного элемента, затем нажмите на диск.
  ③ Повторяйте пункты 1 и 2 до тех пор, пока титр не будет расположен так, как нужно.
(5) Снова нажмите на диск SEL/PUSH EXEC для завершения установки.
В режиме воспроизведения, паузы воспроизведения и записи:
В течение пяти секунд на экране появится индикатор "TITLE SAVE", и установка титра будет завершена.
В режиме ожидания:
Появится индикатор "TITLE". При нажатии кнопки START/STOP для начала записи на экране в течение пяти секунд появится индикатор "TITLE SAVE", и установка титра будет завершена.

Superimposing a title

Наложение титра



If you set the write-protect tab to lock
You cannot superimpose or erase the title. Slide the write-protect tab to release the write protection.

To use the custom title
If you want to use the custom title, select 🗐 in step 2.

If the tape has a blank portion
You cannot superimpose a title on the portion.

If the tape has a blank portion in the middle of the recorded parts
The title may not be displayed correctly.

The titles superimposed with your camcorder
- They are displayed by only the DV miniDV format video equipment with index titler function.
- The point you superimposed the title may be detected as an index signal when searching a recording with other video equipment.

Если защитный лепесток установлен в положение защиты от записи
Невозможно выполнять наложение или удаление титра. Передвиньте лепесток защиты записи для отключения защиты.

Для использования собственного титра
Если нужно использовать собственный титр, выберите 🗐 в пункте 2.

Если на пленке имеется незаписанный участок
В этом участке наложение титра невозможно.

Если на пленке имеется незаписанный участок между записанными частями
Титр может отображаться неправильно.

Титры, наложенные с помощью данной видеокамеры
- Они отображаются только с помощью видеоаппаратуры формата DV miniDV с функцией индексного наложения титров.
- Место наложения титра может быть обнаружено по индексному сигналу при поиске записи с помощью другой видеоаппаратуры.

Superimposing a title

If the tape has too many index signals
You may not be able to superimpose a title because the memory is full. In this case, delete data you do not need.

Not to display titles
Set TITLE DISP to OFF in the menu settings (p. 98).

Title setting
- The title colour changes as follows:
  WHITE ←→ YELLOW ←→ VIOLET ←→ RED ←→ CYAN ←→ GREEN ←→ BLUE
- The title size changes as follows:
  SMALL ←→ LARGE
  You cannot input more than 12 characters in LARGE size.
- If you select the title size "SMALL," you have nine choices for the title position.
  If you select the title size "LARGE," you have eight choices for the title position.

One cassette can have up to about 20 titles, if one title consists of five characters
However, if the cassette memory is full with date, photo and cassette label data, one cassette can have only up to about 11 titles with five characters each.
Cassette memory capacity is as follows:
- Six date data (maximum)
- 12 photo data (maximum)
- One cassette label (maximum)

If the "CM FULL" mark appears
The cassette memory is full. If you erase the title in the cassette, you can label it.

Наложение титра

Если на кассете записано слишком много индексных сигналов
Возможно, наложение титров будет невозможно, поскольку произошло переполнение памяти. В этом случае удалите ненужные данные.

Для отмены отображения титров
Установите команду TITLE DISP в положение OFF в установках меню (стр. 98).

Установка титра
- Цвет титра изменяется следующим образом:
  WHITE (БЕЛЫЙ) ←→ YELLOW (ЖЕЛТЫЙ) ←→ VIOLET (ФИОЛЕТОВЫЙ) ←→ RED (КРАСНЫЙ) ←→ CYAN (ГОЛУБОЙ) ←→ GREEN (ЗЕЛЕНЫЙ) ←→ BLUE (СИНИЙ)
- Размер титра изменяется следующим образом:
  SMALL (МАЛЕНЬКИЙ) ←→ LARGE (БОЛЬШОЙ)
  При большом размере нельзя ввести более 12 символов.
- Если выбран "SMALL" (маленький) размер титра, можно выбрать один из девяти вариантов символов в позиции титра.
  Если выбран "LARGE" (большой) размер титров, можно выбрать один из восьми вариантов символов в позиции титра.

На одной кассете может вмещаться до 20 титров, если один титр состоит из пяти символов
Однако, если кассетная память уже содержит дату, фото и данные кассетной маркировки, то на одной кассете может вмещаться только около 11 титров по пять символов каждый.
Емкость кассетной памяти следующая:
- Данные шести дат (максимум)
- Данные 12 фото (максимум)
- Одна кассетная маркировка (максимум)

Если появляется знак "CM FULL"
Кассетная память переполнена. Если стереть титр на кассете, то ее можно будет промаркировать.

Superimposing a title

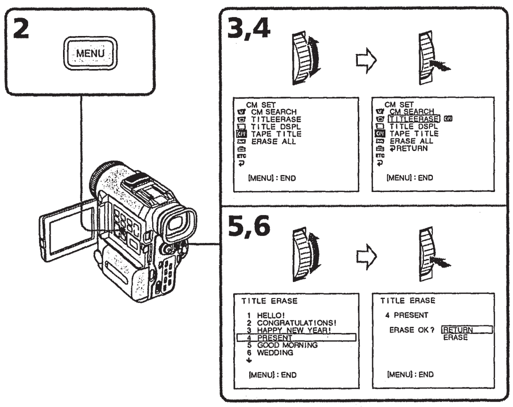
Erasing a title

(1) Set the POWER switch to VTR.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select CM, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select TITLEERASE, then press the dial.
Title erase display appears.
(5) Turn the SEL/PUSH EXEC dial to select the title you want to erase, then press the dial.
"ERASE OK ?" indicator appears.
(6) Make sure the title is the one you want to erase, and turn the SEL/PUSH EXEC dial to select ERASE, then press the dial.

Наложение титра

Стирание титра

(1) Установите переключатель POWER в положение VTR.
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора CM, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора TITLEERASE, затем нажмите на диск.
Появится индикация стирания титра.
(5) Поверните диск SEL/PUSH EXEC для выбора титра, который необходимо удалить, затем нажмите на диск.
Появится индикатор "ERASE OK ?".
(6) Убедитесь, что это именно тот титр, который необходимо удалить, поверните диск SEL/PUSH EXEC для выбора ERASE, затем нажмите на диск.



To cancel erasing
Select RETURN in step 6.

Для отмены стирания
Выберите установку RETURN в пункте 6.

Making your own titles

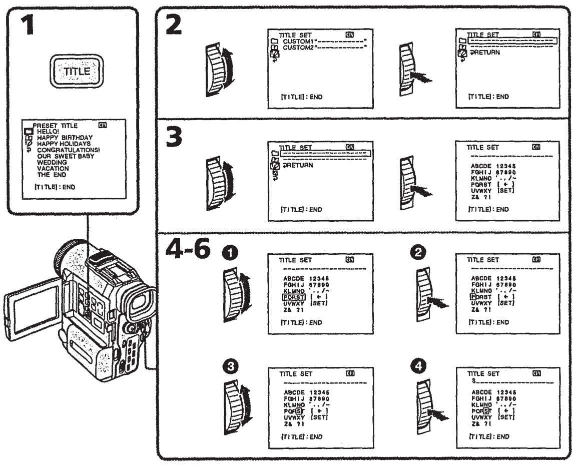
CM only You can make up to two titles and store them in cassette memory. Each title can have up to 20 characters.

(1) Press TITLE in the standby/playback/playback pause mode.
(2) Turn the SEL/PUSH EXEC dial to select ᵀ⁄, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select the first line (CUSTOM1) or second line (CUSTOM2), then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.
(6) Repeat steps 4 and 5 until you have selected all characters and completed the title.
(7) To finish making your own titles, turn the SEL/PUSH EXEC dial to select [SET], then press the dial. The title is stored in memory.
(8) Press TITLE to make the title menu disappear.

Создание собственных титров

CM only Можно создать не более двух титров и сохранить их в кассетной памяти. Каждый титр может содержать не более 20 символов.

(1) Нажмите кнопку TITLE в режиме ожидания/воспроизведения/паузы воспроизведения.
(2) Поверните диск SEL/PUSH EXEC для выбора ᵀ⁄, затем нажмите на диск.
(3) Поверните диск SEL/PUSH EXEC для выбора первой строки (CUSTOM1) или второй строки (CUSTOM2), затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора колонки с нужным символом, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора нужного символа, затем нажмите на диск.
(6) Повторите пункты 4 и 5 до тех пор, пока не будут выбраны все символы и полностью набран титр.
(7) Для завершения составления собственных титров поверните диск SEL/PUSH EXEC для выбора [SET], затем нажмите на диск. Титр будет сохранен в памяти.
(8) Нажмите кнопку TITLE, чтобы исчезло меню титров.



Making your own titles

To change a title you have stored
In step 3, select CUSTOM1 or CUSTOM2, depending on which title you want to change, then press the SEL/PUSH EXEC dial. Turn the SEL/PUSH EXEC dial to select [←], then press the dial to delete the title. The last character is erased. Enter the new title as desired.

If you take five minutes or longer to enter characters in the standby mode while a cassette is in your camcorder
The power automatically goes off. The characters you have entered remain stored in memory. Set the POWER switch to OFF once and then to CAMERA again, then complete your title.
We recommend setting the playback or playback pause mode or removing the cassette so that your camcorder does not automatically turn off while you are entering title characters.

To erase a character
Turn the SEL/PUSH EXEC dial to select [←], then press the dial. The last character is erased.

To enter a space
Select [Z& ? !], then select the blank part.

Создание собственных титров

Для изменения сохраненного в памяти титра
В пункте 3 выберите установку CUSTOM1 или CUSTOM2, в зависимости от того, какой титр нужно изменить, затем нажмите на диск SEL/PUSH EXEC. Поверните диск SEL/PUSH EXEC для выбора установки [←], затем нажмите на диск для удаления титра. Последний символ будет удален. Введите требуемый новый титр.

Если в режиме ожидания ввод символов занимает пять или более минут, когда кассета находится в видеокамере
Питание будет автоматически отключено. Введенные символы сохранятся в памяти видеокамеры. Установите переключатель POWER в положение OFF, а затем снова в положение CAMERA и завершите установку титра.
Рекомендуется установить режим воспроизведения или паузы воспроизведения, или извлечь кассету, чтобы видеокамера автоматически не выключалась во время ввода символов титров.

Для удаления символа
Поверните диск SEL/PUSH EXEC для выбора установки [←], затем нажмите на диск. Последний символ будет удален.

Для ввода пробела
Выберите [Z& ? !], затем выберите пустую часть.

Labelling a cassette

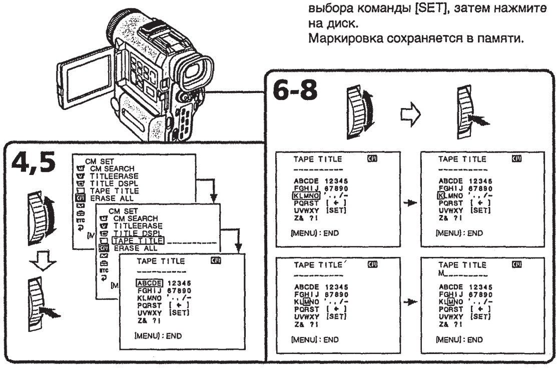
CM only If you use a tape with cassette memory, you can label a cassette. The label can consist of up to 10 characters and is stored in cassette memory. When you insert the labelled cassette and set the POWER switch to ON, the label is displayed for about five seconds.

(1) Insert the cassette you want to label.
(2) Set the POWER switch to VTR.
(3) Press MENU to display the menu.
(4) Turn the SEL/PUSH EXEC dial to select CM, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select TAPE TITLE, then press the dial. Tape title display appears.
(6) Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
(7) Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.
(8) Repeat steps 6 and 7 until you finish the label.
(9) Turn the SEL/PUSH EXEC dial to select [SET], then press the dial.
The label is stored in memory.

Маркировка кассеты

CM only При использовании ленты с кассетной памятью можно выполнить маркировку кассеты. Маркировка может содержать не более 10 символов и хранится в кассетной памяти. При вставке маркированной кассеты и установке переключателя POWER в положение ON в течение около пяти секунд будет отображаться маркировка.

(1) Вставьте кассету, которую необходимо промаркировать.
(2) Установите переключатель POWER в положение VTR.
(3) Нажмите кнопку MENU для отображения меню.
(4) Поверните диск SEL/PUSH EXEC для выбора установки CM, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора TAPE TITLE, затем нажмите на диск. Появится изображение маркировки ленты.
(6) Поверните диск SEL/PUSH EXEC для выбора колонки с нужным символом, затем нажмите на диск.
(7) Поверните диск SEL/PUSH EXEC для выбора нужного символа, затем нажмите на диск.
(8) Повторите пункты 6 и 7 до тех пор, пока не будет набрана маркировка.
(9) Поверните диск SEL/PUSH EXEC для выбора команды [SET], затем нажмите на диск.
Маркировка сохраняется в памяти.



Labelling a cassette

To enter a space

Select [Z&   ? !], then select the blank part.

To change the label you have made

Insert the cassette to change the label, and operate in the same way to make a new label.

If you set the write-protect tab of the tape to lock
You cannot label the tape. Slide the write-protect tab to release the write protection.

If you have superimposed titles in the cassette
When the label is displayed, up to four titles also appear.

When the "-----" indicator has fewer than 10 spaces
The cassette memory is full.
The "-----" indicates the number of characters you can select for the label.

To erase a character

Turn the SEL/PUSH EXEC dial to select [←], then press the dial. The last character is erased.

Маркировка кассеты

Для ввода пробела

Выберите [Z&   ? !], затем выберите пустую часть.

Для изменения выполненной маркировки

Вставьте кассету, маркировку которой необходимо изменить, и выполните те же действия, что и для создания новой маркировки.

Если защитный лепесток установлен в положение защиты от записи
Вы не сможете выполнить маркировку ленты. Передвиньте лепесток защиты записи для отключения защиты.

Если выполнено наложение титров на кассете
Когда отображается маркировка, также отображаются до четырех титров.

Если индикатор "-----" содержит менее 10 знаков
Кассетная память переполнена.
Индикатор "-----" показывает количество символов, которые можно выбрать для маркировки.

Для удаления символа

Поверните диск SEL/PUSH EXEC для выбора установки [←], затем нажмите на диск. Последний символ будет удален.

— Customizing Your Camcorder —

Changing the menu settings

To change the mode settings in the menu settings, select the menu items with the SEL/PUSH EXEC dial. The default settings can be partially changed. First, select the icon, then the menu item and then the mode.

(1) In the standby, VTR, or MEMORY mode, press MENU.
(2) Turn the SEL/PUSH EXEC dial to select the desired icon, then press the dial to set.
(3) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial to set.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode, then press the dial to set.
(5) If you want to change other items, select ⮐ RETURN and press the dial, then repeat steps 2 to 4.

For details, see "Selecting the mode setting of each item" (p. 99).

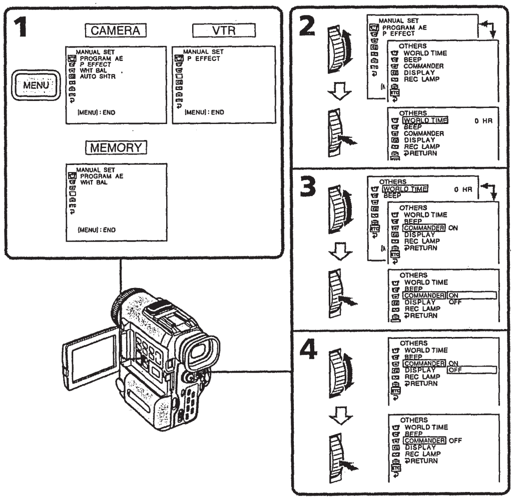
– Выполнение индивидуальных установок на видеокамере –

Изменение установок меню

Для изменения установок режимов в установках меню выберите элементы меню с помощью диска SEL/PUSH EXEC. Заводские установки могут частично отличаться. Сначала выберите значок, затем элемент меню, а затем режим.

(1) В режиме ожидания, VTR или MEMORY нажмите кнопку MENU.
(2) Поверните диск SEL/PUSH EXEC для выбора нужного значка, затем для установки нажмите на диск.
(3) Поверните диск SEL/PUSH EXEC для выбора нужного элемента, затем для установки нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора нужного режима, затем для установки нажмите на диск.
(5) Если необходимо изменить другие элементы, выберите ⮐ RETURN и нажмите на диск, затем повторите пункты 2 – 4.

Подробные сведения приведены в разделе "Выбор установок режима каждого элемента" (стр. 106).



Changing the menu settings

To make the menu display disappear

Press MENU.

Menu items are displayed as the following icons:

- MANUAL SET
- CAMERA SET
- VTR SET
- LCD/VF SET
- MEMORY SET
- CM SET
- TAPE SET
- SETUP MENU
- OTHERS

Изменение установок меню

Для того чтобы скрыть индикацию меню

Нажмите кнопку MENU.

Элементы меню отображаются в виде следующих значков:

- MANUAL SET
- CAMERA SET
- VTR SET
- LCD/VF SET
- MEMORY SET
- CM SET
- TAPE SET
- SETUP MENU
- OTHERS

English

Selecting the mode setting of each item ● is the default setting.

Menu items differ depending on the position of the POWER switch.
The LCD screen shows only the items you can operate at the moment.

Icon/item	Mode	Meaning	POWER switch
PROGRAM AE		To suit your specific shooting requirement (p. 55).	CAMERA MEMORY
P EFFECT		To add special effects like those in films or on TV to images (p. 50).	VTR CAMERA
WHT BAL		To adjust the white balance (p. 45).	CAMERA MEMORY
AUTO SHTR	● ON	To automatically activate the electronic shutter when shooting in bright conditions.	CAMERA
	OFF	To deactivate the electronic shutter even when shooting in bright conditions.	
D ZOOM	● OFF	To deactivate the digital zoom. Up to 10× zoom is carried out.	CAMERA
	ON	To activate the digital zoom. More than 10× to 40× zoom is performed digitally (p. 25).	
16:9WIDE	● OFF	—	CAMERA
	ON	To record a 16:9 wide picture (p. 47).	
STEADYSHOT	● ON	To compensate for camera-shake.	CAMERA
	OFF	To cancel the SteadyShot function. Natural pictures are produced when shooting a stationary object with a tripod.	
N.S. LIGHT	● ON	To use the NightShot Light function (p. 29).	CAMERA MEMORY
	OFF	To cancel the NightShot Light function..	

Notes on the SteadyShot function

- The SteadyShot function will not correct excessive camera-shake.
- Attachment of a conversion lens (not supplied) may influence the SteadyShot function.

If you cancel the SteadyShot function
The SteadyShot OFF indicator appears. Your camcorder prevents excessive compensation for camera-shake.

Icon/item	Mode	Meaning	POWER switch
HiFi SOUND	● STEREO	To play back a stereo tape or dual sound track tape with main and sub sound (p. 155).	VTR
	1	To play back a stereo tape with the left sound or a dual sound tape with main sound.	
	2	To play back a stereo tape with the right sound or a dual sound track tape with sub sound.	
AUDIO MIX		To adjust the balance between the stereo 1 and stereo 2 (p 87). 	VTR
NTSC PB	● ON PAL TV	To play back a tape recorded on your camcorder on a PAL system TV.	VTR
	NTSC 4.43	To play back a tape recorded on in the NTSC colour system on a TV with the NTSC 4.43 mode.	
LCD BRIGHT		To adjust the brightness on the LCD screen with the SEL/PUSH EXEC dial. To darken To lighten	VTR CAMERA MEMORY
LCD B. L.	● BRT NORMAL	To set the brightness on the LCD screen normal.	VTR CAMERA MEMORY
	BRIGHT	To brighten the LCD screen.	
LCD COLOUR		To adjust the colour on the LCD screen with the SEL/PUSH EXEC dial. To get low-intensity To get high-intensity	VTR CAMERA MEMORY
VF BRIGHT		To adjust the brightness on the viewfinder screen with the SEL/PUSH EXEC dial. To darken To lighten	VTR CAMERA MEMORY

When LCD B. L. is set to BRIGHT, the battery life is reduced by nearly 10%.
When you use power sources other than the battery pack, "BRIGHT" is automatically selected.

Note on NTSC PB
When you play back a tape on a Multi System TV, select the best mode while viewing the picture on the TV.

Icon/item	Mode	Meaning	POWER switch
CONTINUOUS	● OFF	Not to record continuously.	MEMORY
	ON	To record pictures continuously (p. 125).	
	MULTI SCRN	To record nine pictures continuously (p. 125).	
QUALITY	● SUPER FINE (SFN)	To record still pictures in the super fine image quality mode, using the "Memory Stick" (p. 119).	VTR MEMORY
	FINE (FINE)	To record still pictures in the fine image quality mode, using the "Memory Stick" (p. 119).	
	STANDARD (STD)	To record still pictures in the standard image quality mode, using the "Memory Stick" (p. 119).	
IMAGE SIZE	● 1152 × 864	To record 1152 × 864 size still pictures.	MEMORY
	640 × 480	To record 640 × 480 size still pictures.	
PRINT MARK	● OFF	To erase print marks on still pictures.	VTR MEMORY
	ON	To write a print mark on the recorded still images you want to print out later.	
PROTECT	● OFF	To release protections of still pictures.	VTR MEMORY
	ON	To protect selected still pictures against accidental erasure (p. 146).	
SLIDE SHOW		To play back all the images as a slide show (p. 144).	MEMORY
DELETE ALL		To delete all the unprotected images (p. 149).	MEMORY

Note on IMAGE SIZE
If you set CONTINUOUS to MULTI SCRN or you set the POWER switch to VTR, IMAGE SIZE is automatically set to 640 × 480.

Icon/item	Mode	Meaning	POWER switch
FORMAT	● RETURN	To cancel formatting.	MEMORY
	FORMAT	To format an inserted "Memory Stick." 1. Select FORMAT with the SEL/PUSH EXEC dial, then press the dial. 2. Turn the SEL/PUSH EXEC dial to select FORMAT, then press the dial. 3. After "EXECUTE" appears, press the SEL/PUSH EXEC dial. "FORMATTING" appears during formatting. "COMPLETE" appears when formatting is finished.	
PHOTO SAVE		To duplicate still pictures (p. 136).	VTR
CM SEARCH	● ON	To search using cassette memory (p. 64).	VTR
	OFF	To search without using cassette memory.	
TITLEERASE		To erase the title you have superimposed (p. 93).	VTR CAMERA
TITLE DSPL	● ON	To display the title you have superimposed.	VTR
	OFF	Not to display the title.	
TAPE TITLE		To label a cassette (p. 96).	VTR CAMERA
ERASE ALL		To erase all the data in cassette memory.	VTR CAMERA

Notes on formatting
- Supplied or optional "Memory Stick"s have been formatted at factory. Formatting with this camcorder is not required.
- Do not turn the POWER switch or press any button while the display shows "FORMATTING."
- You cannot format the "Memory Stick" if the write-protect tab on the "Memory Stick" is set to LOCK.
- Format again if the message "⊠" appears.

Formatting erases all information on the "Memory Stick"
Check the contents of the "Memory Stick" before formatting:
- Formatting erases sample images on the "Memory Stick."
- Formatting erases the protected image data on the "Memory Stick."

Icon/item	Mode	Meaning	POWER switch
REC MODE	● SP	To record in the SP (Standard Play) mode.	VTR CAMERA
	LP	To increase the recording time to 1.5 times the SP mode.	
AUDIO MODE	● 12BIT	To record in the 12-bit mode (two stereo sounds).	VTR CAMERA
	16BIT	To record in the 16-bit mode (the one stereo sound with high quality).	
REMAIN	● AUTO	To display the remaining tape bar: • for about eight seconds after your camcorder is turned on and calculates the remaining amount of tape • for about eight seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape • for about eight seconds after ▶ is pressed in VTR mode • for about eight seconds after DISPLAY is pressed to display the screen indicators • for the period of tape rewinding, forwarding or picture search in the VTR mode	VTR CAMERA
	ON	To always display the remaining tape indicator.	
DATA CODE	● DATE/CAM	To display date, time and various settings during playback.	VTR
	DATE	To display date and time during playback.	

Notes on the LP mode
- When you record a tape in the LP mode on your camcorder, we recommend playing back the tape on your camcorder. When you play back the tape on other camcorders or VCRs, noise may occur in pictures or sound.
- When you record in the LP mode, we recommend using a Sony Excellence/Master mini DV cassette so that you can get the most out of your camcorder.
- You cannot make audio dubbing on a tape recorded in the LP mode. Use the SP mode for the tape to be audio-dubbed.
- When you record in the SP and LP modes on one tape or you record some scenes in the LP mode, the playback picture may be distorted or the time code may not be written properly between scenes.

Notes on AUDIO MODE
- You cannot dub audio sound on a tape recorded in the 16-bit mode.
- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
▤ **CLOCK SET**		To reset the date or time (p. 113).	CAMERA MEMORY
LTR SIZE	● NORMAL	To display selected menu items in normal size.	VTR CAMERA MEMORY
	2×	To display selected menu items at twice the normal size.	
DEMO MODE	● ON	To make the demonstration appear.	CAMERA
	OFF	To cancel the demonstration mode.	
ETC **WORLD TIME**		To set the clock to the local time. Turn the SEL/PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA MEMORY
BEEP	● MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder.	VTR CAMERA MEMORY
	NORMAL	To output the beep instead of the melody.	
	OFF	To cancel the melody and beep sound.	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder.	VTR CAMERA MEMORY
	OFF	To deactivate the Remote Commander to avoid remote control misoperation caused by other VCR's remote control.	
DISPLAY	● LCD	To show the display on the LCD screen and viewfinder screen.	VTR CAMERA MEMORY
	V-OUT/LCD	To show the display on the TV screen, LCD screen and viewfinder screen.	

Notes on DEMO MODE
- You cannot select DEMO MODE when a cassette is inserted in your camcorder.
- DEMO MODE is set to STBY (Standby) at factory and the demonstration starts about 10 minutes after you have set the POWER switch to CAMERA without a cassette inserted.
  To cancel the demonstration, insert a cassette, set the POWER switch to other than CAMERA, or set DEMO MODE to OFF.
- When NIGHTSHOT is set to ON, the NIGHTSHOT indicator appears on the LCD screen or in the viewfinder and you cannot select DEMO MODE in the menu settings.

Note
If you press DISPLAY with DISPLAY set to V-OUT/LCD in the menu settings, the picture from a TV or VCR will not appear on the LCD screen even when your camcorder is connected to outputs on the TV or VCR.

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
ETC **REC LAMP**	● ON	To light up the camera recording lamp at the front of your camcorder.	CAMERA MEMORY
	OFF	To turn the camera recording lamp off so that person is not aware of the recording.	
DV EDITING		To duplicate the desired portion on a tape by simply selecting the scenes to edit, using other equipment connected with an i.LINK cable (DV connecting cable) (not supplied) (p. 73).	VTR

When recording a close subject
When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend you set REC LAMP to OFF.

In more than five minutes after removing the power source
The "AUDIO MIX," "COMMANDER," "HiFi SOUND," "PROGRAM AE" and "WHT BAL" items are returned to their default settings.
The other menu items are held in memory even when the power source is removed.

Resetting the date and time

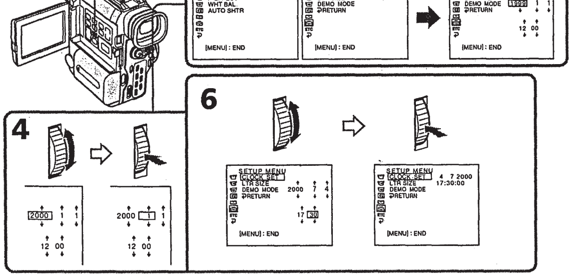
The default clock setting is set to London time for United Kingdom, and to Paris time for the other European countries.
If you do not use your camcorder for about six months, the date and time settings may be released (bars may appear) because the vanadium-lithium battery installed in your camcorder will have been discharged (p. 177).
First, set the year, then the month, the day, the hour and then the minute.

(1) Press MENU to display the menu in the standby mode.
(2) Turn the SEL/PUSH EXEC dial to select ▤, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select CLOCK SET, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to adjust the desired year, then press the dial.
(5) Set the month, day and hour by turning the SEL/PUSH EXEC dial and pressing the dial.
(6) Set the minute by turning the SEL/PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
(7) Press MENU to make the menu settings disappear.

Переустановка даты и времени

По умолчанию часы установлены на лондонское время для моделей Великобритании и на парижское время для других европейских моделей.
Если видеокамера не использовалась около полугода, установки даты и времени могут исчезнуть (появятся черточки), поскольку ванадиево-литиевая батарейка, установленная в видеокамере, разрядится (стр. 177).
Сначала установите год, затем месяц, день, час и минуты.

(1) Нажмите кнопку MENU для отображения меню в режиме ожидания.
(2) Поверните диск SEL/PUSH EXEC для выбора установки ▤, затем нажмите на диск.
(3) Поверните диск SEL/PUSH EXEC для выбора CLOCK SET, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора нужного года, а затем нажмите на диск.
(5) Установите месяц, день и час путем вращения диска SEL/PUSH EXEC и нажатия на диск.
(6) Установите минуты путем вращения диска SEL/PUSH EXEC и нажатия на диск по сигналу точного времени. Часы начнут работать.
(7) Нажмите кнопку MENU, чтобы исчезли установки меню.



Resetting the date and time

The year changes as follows:

Переустановка даты и времени

Год будет изменяться следующим образом:

1999 ↔ 2000 ← · · · · → 2029

If you do not set the date and time
"– –:– –:– –" is recorded on the data code of the tape and the "Memory Stick."

Note on the time indicator
The internal clock of your camcorder operates on a 24-hour cycle.

Если Вы не установите дату и время
На ленте и плате памяти "Memory Stick" будет записана индикация "- -:- -:- -".

Индикатор времени
Встроенные часы видеокамеры работают в 24-часовом режиме.

— "Memory Stick" Operations —

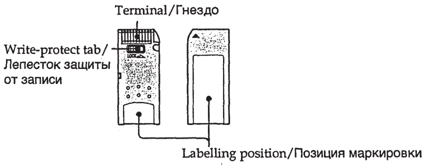
Using a "Memory Stick" – introduction

You can record and play back still images on a "Memory Stick" supplied with your camcorder. You can easily play back, record or delete still images. You can exchange image data with other equipment such as a personal computer etc., using the Serial port adaptor for Memory Stick supplied with your camcorder or PC card adaptor for Memory Stick (not supplied).

On file format (JPEG)
Your camcorder compresses image data in JPEG format (extension .jpg).

Typical image data file name
DSC00001.jpg

Before using a "Memory Stick"


Terminal/Гнездо
Write-protect tab/ Лепесток защиты от записи
Labelling position/Позиция маркировки

- You cannot record or erase still images when the write-protect tab on the "Memory Stick" is set to LOCK.
- We recommend backing up important data.
- Image data may be damaged in the following cases:
  - If you remove the "Memory Stick," turn the power off, or detach the battery for replacement when the access lamp is flashing.
  - If you use "Memory Stick"s near magnets or magnet fields such as those of speakers and televisions.

– Операции с "Memory Stick" –

Использование "Memory Stick" – Введение

Можно записывать и воспроизводить неподвижные изображения на "Memory Stick", прилагаемой к видеокамере. Вы можете легко воспроизводить, записывать или удалять неподвижные изображения. Можно выполнять обмен данных изображения с другой аппаратурой, такой как персональный компьютер и т.п., используя адаптер последовательного порта для Memory Stick, прилагаемой к видеокамере, или адаптер PC-карты для Memory Stick (не входит в комплект).

О формате файлов (JPEG)
Видеокамера сжимает данные изображения в формат JPEG (с расширением .jpg).

Типичное имя файла данных изображения
DSC00001.jpg

Перед использованием "Memory Stick"

- Невозможно записывать или стирать неподвижные изображения, если лепесток защиты записи на "Memory Stick" установлен в положение LOCK.
- Рекомендуется выполнять копии важных данных.
- Данные изображения могут быть повреждены в следующих случаях:
  - Если Вы извлекаете "Memory Stick", выключаете питание или отсоединяете батарейный блок для замены, когда мигает лампочка обращения ACCESS.
  - Если Вы используете "Memory Stick" рядом с источниками магнитных полей, такими как громкоговорители и телевизоры.

Using a "Memory Stick" – introduction

- Prevent metallic objects or your finger from coming into contact with the metal parts of the connecting section.
- Stick its label on the labelling position.
- Do not bend, drop or apply strong shock to "Memory Stick"s.
- Do not disassemble or modify "Memory Stick"s.
- Do not let "Memory Stick"s get wet.
- Do not use or keep "Memory Stick"s in locations that are:
  - Extremely hot such as in a car parked in the sun or under the scorching sun.
  - Under direct sunlight.
  - Very humid or subject to corrosive gases.
- When you carry or store a "Memory Stick," put it in its case.

Formatting the supplied "Memory Stick"

Formatting with this camcorder is not required. The "Memory Stick" has been formatted in the FAT-format at factory.

"Memory Stick" supplied with your camcorder

- Sample images are recorded in the "Memory Stick" (p. 131). Note that these images will be deleted if you format the "Memory Stick."
- Stick the supplied label on the labelling position to prevent the accidental erasure. As for the labelling position, see the illustration on the previous page.

"Memory Stick"s formatted by a computer

"Memory Stick"s formatted by Windows OS or Macintosh computers do not have a guaranteed compatibility with this camcorder.

Использование "Memory Stick" – Введение

- Не прикасайтесь металлическими предметами или пальцами к металлическим деталям соединительных секций.
- Этикетку следует прикреплять в позиции маркировки.
- Не сгибайте, не роняйте и сильно не трясите "Memory Stick".
- Не разбирайте и не модифицируйте "Memory Stick".
- Не допускайте увлажнения "Memory Stick".
- Не используйте и не храните "Memory Stick" в местах:
  - Слишком жарких, например, в автомобиле, припаркованном в солнечном месте, или под палящим солнцем.
  - Под прямым солнечным светом.
  - Очень влажных местах или подверженных воздействию коррозийных газов.
- При переноске или хранении необходимо положить "Memory Stick" в футляр.

Форматирование прилагаемой "Memory Stick"

Форматирование на этой видеокамере не требуется. "Memory Stick" отформатирована в формате FAT на предприятии-изготовителе.

"Memory Stick", прилагаемая к Вашей видеокамере

- На "Memory Stick" записаны примеры изображений (стр. 131). Следует помнить, что изображения будут удалены, если Вы отформатируете "Memory Stick".
- Прикрепите прилагаемую наклейку в позиции маркировки для предотвращения случайного стирания. Для получения сведений о позиции маркировки см рисунок на предыдущей странице.

"Memory Stick", отформатированные на компьютере
"Memory Stick", отформатированные с помощью компьютеров, использующих операционную систему Windows или Macintosh, не обладают гарантированной совместимостью с данной видеокамерой.

Using a "Memory Stick" – introduction

Notes on image data compatibility

- Image data files recorded on "Memory Stick"s by your camcorder conform with the Design Rules for Camera File Systems universal standard established by the JEIDA (Japan Electronic Industry Development Association). You cannot play back on your camcorder still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E or DSC-D700/D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- If you cannot use the "Memory Stick" that is used with other equipment, format it with this camcorder (p. 102). However, formatting erases all information on the "Memory Stick."

"Memory Stick" and are trademarks of Sony Corporation.

- Windows is a registered trademark licensed to Microsoft Corporation, registered in the U.S.A. and other countries.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual.

Использование "Memory Stick" – Введение

Совместимость данных изображения

- Файлы данных изображения, записанные видеокамерой на "Memory Stick", соответствуют универсальному стандарту согласно правилам проектирования файловых систем для видеокамер, установленному ассоциацией JEIDA (Японской ассоциацией развития электронной промышленности) Вы не можете воспроизводить на Вашей видеокамере неподвижные изображения, записанные на другой аппаратуре (DCR-TRV890E/TRV900/TRV900E или DSC-D700/D770), которая не удовлетворяет этому универсальному стандарту. (Эти модели не продаются в некоторых регионах.)
- Если Вы не сможете использовать "Memory Stick", которые используются на другой аппаратуре, отформатируйте их с помощью этой видеокамеры (стр. 109). Однако форматирование удалит всю информацию на "Memory Stick".

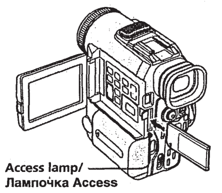
"Memory Stick" и являются торговыми марками корпорации Sony.

- Windows является зарегистрированной торговой маркой, которая запатентована корпорацией Microsoft, зарегистрированной в США и других странах.
- Все другие наименования продуктов, упомянутые в этом документе, могут быть торговыми марками или зарегистрированными торговыми марками соответствующих компаний. В дальнейшем, "™" и "®" не указываются в каждом отдельном случае в настоящем документе.

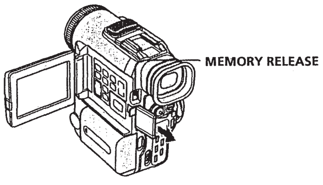
Using a "Memory Stick" – introduction

Inserting a "Memory Stick"

Insert a "Memory Stick" with the Sony logo pointing toward the LCD panel and the ◄ mark pointing inward.



To eject a "Memory Stick"
Press MEMORY RELEASE.



When the access lamp is lit or flashing
Never shake or strike your camcorder. Do not turn the power off , eject a "Memory Stick" or remove the battery pack. Otherwise, the image data breakdown may occur.

Использование "Memory Stick" – Введение

Установка "Memory Stick"

Вставьте "Memory Stick". Эмблема Sony при этом должна быть направлена к панели ЖКД, а обозначение ◄ - внутрь.

Для извлечения "Memory Stick"
Нажмите кнопку MEMORY RELEASE.

Если лампочка обращения ACCESS горит или мигает
Не трясите и не стучите по видеокамере. Не выключайте питание, не извлекайте "Memory Stick" из отсека и не снимайте батарейный блок. В противном случае, данные изображения могут быть повреждены.

Using a "Memory Stick" – introduction

Selecting image quality mode

You can select image quality mode in still picture recording. Default setting is SUPER FINE.

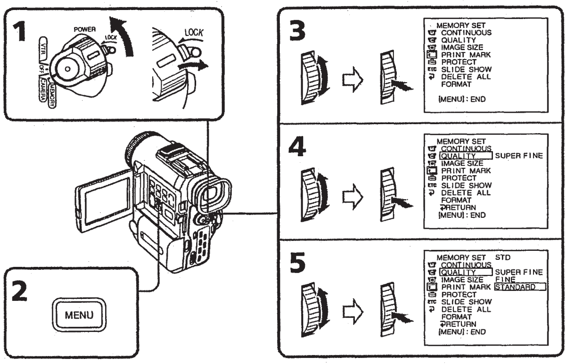
(1) Set the POWER switch to VTR or MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select QUALITY, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired image quality, then press the dial.

Использование "Memory Stick" – Введение

Выбор режима качества изображения

Можно выбрать режим качества изображения при записи неподвижного изображения. SUPER FINE является установкой по умолчанию.

(1) Установите переключатель POWER в положение VTR или MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора установки ▭, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки QUALITY, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора нужного качества изображения, затем нажмите на диск.



Note
In some cases, changing the image quality mode may not affect the image quality, depending on the types of images you are shooting.

Примечание
В некоторых случаях изменение режима качества изображения может не влиять на качество изображения, в зависимости от типа снимаемых изображений.

Using a "Memory Stick" – introduction

Image quality settings

Setting	Meaning
SUPER FINE (SFN)	This is the highest image quality in your camcorder. The number of still images you can record is less than FINE. The image is compressed to about 1/3. SFN appears on the screen.
FINE (FINE)	Use this mode when you want to record high quality images. The image is compressed to about 1/6. FINE appears on the screen.
STANDARD (STD)	This is the standard image quality. The image is compressed to about 1/10. STD appears on the screen.

Differences in image quality mode
Recorded images are compressed in JPEG format before being stored in memory. The memory capacity allotted to each image varies depending on the selected image quality mode. Details are shown in the table below. (The image size can be set to 1152 × 864 or 640 × 480.)

When the image size is set to 1152 × 864:

Image quality mode	Memory capacity
SUPER FINE	Approx. 600 KB
FINE	Approx. 300 KB
STANDARD	Approx. 200 KB

When the image size is set to 640 × 480:

Image quality mode	Memory capacity
SUPER FINE	Approx. 190 KB
FINE	Approx. 100 KB
STANDARD	Approx. 60 KB

Note on the image quality mode indicator
This is only displayed during recording.

Использование "Memory Stick" – Введение

Установки качества изображения

Установка	Назначение
SUPER FINE (SFN)	Это наилучшее качество изображения в видеокамере. Количество неподвижных изображений, которые можно записать, будет меньше, чем при установке FINE. Изображение сжимается примерно до 1/3. На экране появляется SFN.
FINE (FINE)	Используйте этот режим, если требуется записать высококачественные изображения. Изображение сжимается примерно до 1/6 На экране появляется FINE.
STANDARD (STD)	Это стандартное качество изображения. Изображение сжимается примерно до 1/10. На экране появляется STD.

Отличия в режиме качества изображения
Перед сохранением в памяти записанные изображения сжимаются в формате JPEG. Объем памяти, выделенный для каждого изображения, изменяется в зависимости от выбранного режима качества изображения. Подробности приводятся в таблице ниже. (Размер изображения можно установить на 1152 × 864 или 640 × 480.)

Когда размер изображения устанавливается на 1152 × 864:

Режим качества изображения	Емкость памяти
SUPER FINE	Прибл. 600 Кб
FINE	Прибл 300 Кб
STANDARD	Прибл. 200 Кб

Когда размер изображения устанавливается на 640 × 480:

Режим качества изображения	Емкость памяти
SUPER FINE	Прибл 190 Кб
FINE	Прибл 100 Кб
STANDARD	Прибл. 60 Кб

Индикатор режима качества изображения
Отображается только во время записи.

Using a "Memory Stick" – introduction

Selecting the image size

You can select the image size from two settings: 1152 × 864 or 640 × 480. However, the image size in VTR mode is automatically set to "640 × 480," even if you have selected "1152 × 864."

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select IMAGE SIZE, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired image size, then press the dial. The indicator changes as follows:

1152 ↔ 640

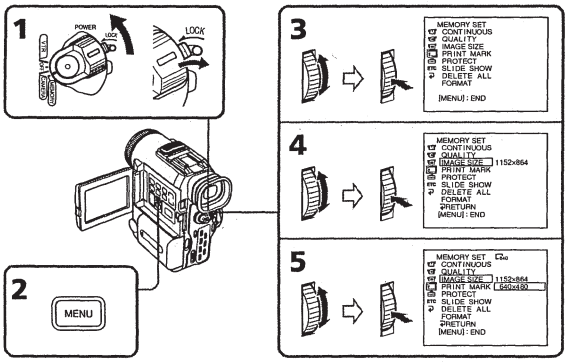
Использование "Memory Stick" – Введение

Выбор размера изображения

Для выбора размера изображения существуют две установки: 1152 × 864 или 640 × 480. Тем не менее, размер изображения в режиме VTR автоматически устанавливается на "640 × 480", даже если был выбран размер "1152 × 864".

(1) Установите переключатель POWER в положение MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора установки ▭, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки IMAGE SIZE, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора нужного размера изображения, затем нажмите на диск. Индикатор будет изменяться следующим образом:

1152 ↔ 640



Using a "Memory Stick" – introduction

Использование "Memory Stick" – Введение

Image size settings/Установки размеров изображения

Setting/ Установка	Meaning/ Назначение	Indicator/Индикатор	
		Recording/ Запись	Playback/ Воспроизведение
1152 × 864	To record 1152 × 864 size still pictures./ Для записи неподвижных изображений размером 1152 × 864.	1152 SFN	1152
640 × 480	To record 640 × 480 size still pictures./ Для записи неподвижных изображений размером 640 × 480.	640 SFN	640

Note
When you play back the image recorded in 1152 x 864 size on other equipment which is not compatible with that size, all of the image may not be played back.

ПРИМЕЧАНИЕ
При воспроизведении изображения, записанного с размером 1152 x 864 на другой аппаратуре, которая несовместима с данным размером, все изображения могут не воспроизводиться.

The approximate number of images you can record on a "Memory Stick"

The approximate number of images you can record on a "Memory Stick" that is formatted using this camcorder varies depending on which image quality mode you select and the complexity of the subject.

Приблизительное количество изображений, которое может быть записано на "Memory Stick"

Приблизительное количество изображений, которое можно записать на "Memory Stick", отформатированной с помощью данной видеокамеры, меняется в зависимости от выбранного режима качества изображения и сложности объекта.

4MB type (supplied)/Тип 4Мб (входит в комплект):

Image size/ Размер изображения	640 × 480	1152 × 864
SUPER FINE (SFN)	20 images/ 20 изображений	6 images/ 6 изображений
FINE (FINE)	40 images/ 40 изображений	12 images/ 12 изображений
STANDARD (STD)	60 images/ 60 изображений	18 images/ 18 изображений

8MB type (not supplied)/Тип 8Мб (не входит в комплект):

Image size/ Размер изображения	640 × 480	1152 × 864
SUPER FINE (SFN)	40 images/ 40 изображений	12 images/ 12 изображений
FINE (FINE)	81 images/ 81 изображение	25 images/ 25 изображений
STANDARD (STD)	122 images/ 122 изображения	37 images/ 37 изображений

Using a "Memory Stick" – introduction

Использование "Memory Stick" – Введение

16MB type (not supplied)/Тип 16Мб (не входит в комплект):

Image size/ Размер изображения	640 × 480	1152 × 864
SUPER FINE (SFN)	82 images/ 82 изображения	25 images/ 25 изображений
FINE (FINE)	164 images/ 164 изображения	51 images/ 51 изображение
STANDARD (STD)	246 images/ 246 изображений	75 images/ 75 изображений

32MB type (not supplied)/Тип 32Мб (не входит в комплект):

Image size/ Размер изображения	640 × 480	1152 × 864
SUPER FINE (SFN)	164 images/ 164 изображения	52 images/ 52 изображения
FINE (FINE)	329 images/ 329 изображений	104 images/ 104 изображения
STANDARD (STD)	494 images/ 494 изображения	152 images/ 152 изображения

If you format a "Memory Stick"
All the data (including sample images) in the "Memory Stick" are erased.

При форматировании "Memory Stick"
Все данные на "Memory Stick" (включая примеры изображений) будут удалены.

Recording still images on "Memory Stick"s – Memory photo recording

You can record still pictures on "Memory Stick"s.

Before operation
Insert a "Memory Stick" into your camcorder.

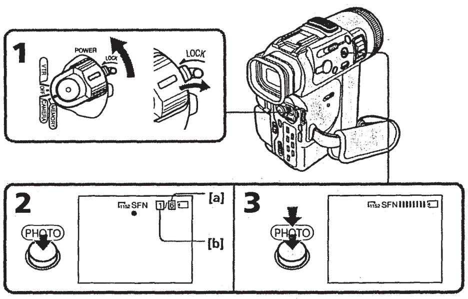
(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Keep pressing PHOTO lightly until the desired still picture appears. The green ● mark stops flashing, then lights up. The brightness of the picture and focus are adjusted, being targeted for the middle of the picture and are fixed. Recording does not start yet.
(3) Press PHOTO deeper. The image displayed on the screen will be recorded on a "Memory Stick." Recording is complete when the bar scroll indicator disappears.

Запись неподвижных изображений на "Memory Stick" – Фотозапись с сохранением в памяти

Можно выполнять запись неподвижных изображений на "Memory Stick".

Перед началом работы
Вставьте "Memory Stick" в видеокамеру.

(1) Установите переключатель POWER в положение MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Держите слегка нажатой кнопку PHOTO до тех пор, пока не появится требуемое неподвижное изображение. Зеленая метка ● прекратит мигать и затем загорится. Яркость изображения и фокусировка настраиваются по центру изображения и фиксируются Запись пока еще не начинается.
(3) Нажмите кнопку PHOTO сильнее. Изображение на экране будет записано на "Memory Stick". Запись будет завершена, когда исчезнет индикатор в виде полоски.



[a] The number of images that can be recorded on the "Memory Stick"
[b] The number of recorded images

[a] Количество изображений, которое может быть записано на "Memory Stick"
[b] Количество записанных изображений

When the POWER switch is set to MEMORY
The following functions do not work: wide TV mode, digital effect, picture effect, title, digital zoom, SteadyShot function, fader, low lux mode, and sports lesson mode. (The indicator flashes in the low lux or sports lesson mode.)

Если переключатель POWER установлен в положение MEMORY
Следующие функции не работают: широкоэкранный телевизионный режим, цифровой эффект, эффект изображения, титр, цифровая трансфокация, устойчивая съемка SteadyShot, фейдер, режим низкой освещенности, а также режим спортивных состязаний. (Индикатор мигает при съемке в режиме низкой освещенности или спортивных состязаний.)

Recording still images on "Memory Stick"s – Memory photo recording

While you are recording a still image
You can neither turn off the power nor press PHOTO.

When you press PHOTO on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

Notes
- When recording still images at step 2 with the PHOTO button pressed lightly, the image momentarily flickers. This is not a malfunction.
- Before you shoot in autofocus mode, check that the subject is in sharp focus.
- The brightness of the picture and focus are adjusted on the center portion of the image.

When recording in MEMORY mode
The angle of view is a little increased than one in CAMERA mode.

Recording images continuously

You can record still pictures continuously. Select one of the two modes described below before recording.

Continuous mode [a]
When the image size is set to 1152 × 864, you can record up to four pictures continuously. When the image size is set to 640 × 480, you can record up to 16 pictures continuously.
The number of recorded photos in continuous mode depends on the capacity of the "Memory Stick."

Multi screen mode (Image size is automatically set to 640 × 480) [b]
You can record nine still pictures continuously on a single page.

Запись неподвижных изображений на "Memory Stick" – Фотозапись с сохранением в памяти

При записи неподвижного изображения
Невозможно выключить питание или нажать кнопку PHOTO.

Если нажать кнопку PHOTO на пульте дистанционного управления
При нажатии этой кнопки видеокамера сразу же запишет изображение на экране.

Примечание
- При записи неподвижных изображений в пункте 2, когда слегка нажата кнопка PHOTO, изображение кратковременно мигает. Однако это не является неисправностью.
- Перед выполнением съемки в режиме автоматической фокусировки, проверьте четкость фокусировки объекта.
- Яркость и фокусировка настраиваются по центру изображения.

При записи в режиме MEMORY
Угол изображения становится немного больше, чем в режиме CAMERA.

Запись изображений непрерывно

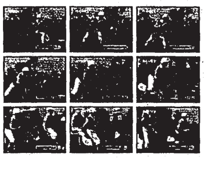
Неподвижные изображения можно записывать непрерывно Перед записью выберите один из двух режимов, описанных ниже.

Непрерывный режим [a]
Когда размер изображения устанавливается на 1152 × 864, то можно записывать не более четырех изображений непрерывно. Когда размер изображения устанавливается на 640 × 480, то можно записывать не более 16 изображений непрерывно.
Количество записываемых фотоснимков в режиме непрерывной записи зависит от емкости "Memory Stick".

Многоэкранный режим (Размер изображения автоматически устанавливается на 640 × 480) [b]
Можно записывать 9 неподвижных изображений непрерывно на одной странице

[a]

[b]



Recording still images on "Memory Stick"s – Memory photo recording

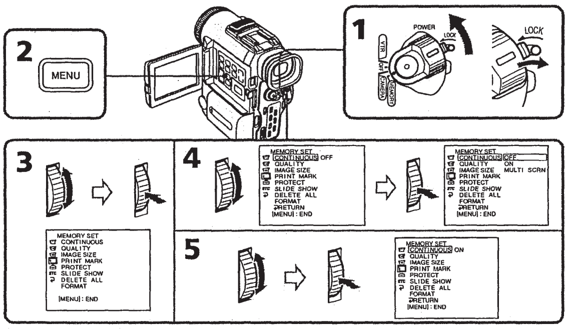
While pressing down PHOTO, the camcorder shoots still pictures continuously. The maximum recordable number of still pictures (1152 × 864: up to four pictures, 640 × 480: up to 16 pictures) is in accordance with the image size setting.
If you release the button during shooting, the recording stops even in progress.
When shooting with the self-timer function or the Remote Commander, the camcorder automatically records up to the maximum recordable number of still pictures.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select CONTINUOUS, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired setting, then press the dial.

Запись неподвижных изображений на "Memory Stick" – Фотозапись с сохранением в памяти

При нажатии кнопки PHOTO видеокамера снимает неподвижные изображения непрерывно. Максимальное количество неподвижных изображений, которое можно записать (1152 × 864: не более четырех изображений, 640 × 480: не более 16 изображений), находится в соответствии с установкой размера изображения.
Если отпустить кнопку во время съемки, запись прекратится, даже при выполнении съемки.
При съемке с функцией таймера самозапуска или с помощью пульта дистанционного управления видеокамера автоматически записывает не более максимального количества неподвижных изображений, которое можно записать.

(1) Установите переключатель POWER в положение MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора установки ▭, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки CONTINUOUS, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора нужной установки, затем нажмите на диск.



Recording still images on "Memory Stick"s – Memory photo recording

If the capacity of the "Memory Stick" becomes full

"⍂ FULL" appears on the screen, and you cannot record still pictures on this "Memory Stick."

Continuous shooting settings

Setting	Meaning (indicator on the screen)
OFF	Your camcorder shoots one image at a time. (no indicator)
ON	Your camcorder shoots up to 16 still images at about 0.6 sec intervals. (▨)
MULTI SCRN	Your camcorder shoots nine still images at about 0.6 sec intervals and displays the images on a single page divided into nine boxes. In this mode, the still images are recorded at 640 × 480 size. (▦)

The number of images in continuous shooting

The number of images you can shoot continuously varies depending on the image size and the capacity of the "Memory Stick."

Image size	The number of images
640 × 480	up to 16 images
1152 × 864	up to 4 images

Note on using the video flash light (not supplied)

The video flash light does not work in the continuous or multi screen mode if you install it to the intelligent accessory shoe.

Запись неподвижных изображений на "Memory Stick" – Фотозапись с сохранением в памяти

Если емкость "Memory Stick" переполняется

На экране появится "⍂ FULL", и тогда невозможно будет записать неподвижные изображения на эту "Memory Stick".

Установки непрерывной съемки

Установка	Назначение (индикатор на экране)
OFF	Видеокамера снимает одно изображение за один раз (без индикатора).
ON	Видеокамера снимает не более 16 неподвижных изображений с интервалами примерно 0,6 сек. (▨)
MULTI SCRN	Видеокамера снимает 9 неподвижных изображений примерно с интервалами 0,6 сек и отображает изображения на одной странице, разделенной на 9 прямоугольников. В этом режиме неподвижные изображения записываются с размером 640 × 480. (▦)

Количество изображений при непрерывной съемке

Количество изображений, которые можно снимать непрерывно, изменяется в зависимости от размера изображения и емкости "Memory Stick".

Размер изображения	Количество изображений
640 × 480	не более 16 изображений
1152 × 864	не более 4 изображений

Использование видеовспышки (не входит в комплект)

Видеовспышка не работает в непрерывном или многоэкранном режиме, если она установлена в держатель для интеллектуальных устройств.

Recording still images on "Memory Stick"s – Memory photo recording

Self-timer memory photo recording

You can make a memory photo recording with the self-timer. This mode is useful when you want to record yourself.

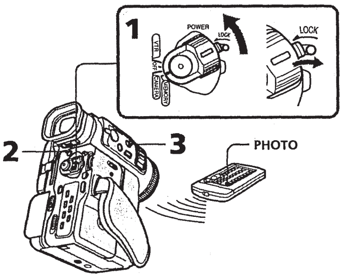
(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press ⏲ (self-timer) in the standby mode.
The ⏲ (self-timer) indicator appears on the LCD screen or in the viewfinder.
(3) Press PHOTO.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically.

Запись неподвижных изображений на "Memory Stick" – Фотозапись с сохранением в памяти

Фотозапись по таймеру самозапуска с сохранением в памяти

Можно выполнять фотосъемку с сохранением в памяти по таймеру самозапуска. Этот режим может пригодиться в том случае, когда необходимо записать себя.

(1) Установите переключатель POWER в положение MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку ⏲ (таймер самозапуска) в режиме ожидания. Индикатор ⏲ (таймер самозапуска) появится на экране ЖКД или в видоискателе.
(3) Нажмите кнопку PHOTO.
Таймер самозапуска начнет обратный отсчет, начиная с 10, со звуковым сигналом. В последние две секунды обратного отсчета звуковой сигнал будет звучать чаще, а затем автоматически начнется запись



To cancel self-timer recording

Press ⏲ (self-timer) so that the ⏲ indicator disappears from the LCD or viewfinder screen. You cannot cancel the self-timer recording using the Remote Commander.

Note

The self-timer recording mode is automatically cancelled when:
- Self-timer recording is finished.
- The POWER switch is set to OFF or VTR.

To check the picture to be recorded

You can check the picture with pressing the PHOTO button lightly, then press it deeper to capture.

Для отмены записи по таймеру самозапуска

Нажмите кнопку ⏲ (таймер самозапуска), так чтобы индикатор ⏲ исчез с экрана ЖКД или видоискателя.
Запись по таймеру самозапуска невозможно отменить с помощью пульта дистанционного управления.

ПРИМЕЧАНИЕ

Режим записи по таймеру самозапуска будет автоматически отменен в случаях:
- окончания записи по таймеру самозапуска.
- установки переключателя POWER в положение OFF или VTR.

Для проверки записываемого изображения

Можно проверить изображение, слегка нажав кнопку PHOTO, затем нажмите ее сильнее для выполнения съемки.

Superimposing a still picture in a "Memory Stick" on a moving picture – MEMORY MIX

You can superimpose a still picture you have recorded on a "Memory Stick" on the top of the moving picture you are recording.

M. CHROM (Memory chromakey)
You can swap a blue area of a still picture such as an illustration or a frame with a moving picture.

M. LUMI (Memory luminancekey)
You can swap a brighter area of a still picture such as a handwritten illustration or title with a moving picture. Record a title on a "Memory Stick" before a trip or event for convenience.

C. CHROM (Camera chromakey)
You can superimpose a moving picture on the top of a still picture such as a picture can be used as background. Shoot the subject against a blue background. The blue area of the moving picture will be swapped with a still picture.

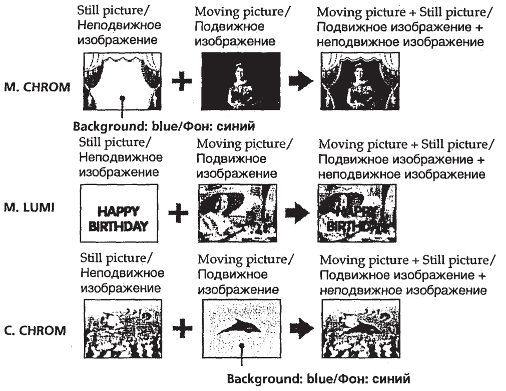
Наложение неподвижного изображения из "Memory Stick" на подвижное изображение – MEMORY MIX

Неподвижное изображение, записанное на "Memory Stick", можно наложить на записываемое подвижное изображение.

M. CHROM (кнопка цветности памяти)
Можно заменять синюю область неподвижного изображения, например, рисунок или кадр, подвижным изображением.

M. LUMI (кнопка яркости памяти)
Можно заменять более светлую область неподвижного изображения, например, рисунок, сделанный от руки, или титр, подвижным изображением. Перед путешествием или каким-нибудь событием запишите титр для удобства на "Memory Stick".

C. CHROM (кнопка цветности видеокамеры)
Подвижное изображение можно наложить на верхнюю часть неподвижного изображения, например, рисунка, используемого в качестве фона. Снимите объект на синем фоне. Синяя область подвижного изображения будет заменена неподвижным изображением.


Still picture/ Неподвижное изображение
Moving picture/ Подвижное изображение
Moving picture + Still picture/ Подвижное изображение + неподвижное изображение
M. CHROM
Background: blue/Фон: синий
Still picture/ Неподвижное изображение
Moving picture/ Подвижное изображение
Moving picture + Still picture/ Подвижное изображение + неподвижное изображение
M. LUMI
HAPPY BIRTHDAY
Still picture/ Неподвижное изображение
Moving picture/ Подвижное изображение
Moving picture + Still picture/ Подвижное изображение + неподвижное изображение
C. CHROM
Background: blue/Фон: синий

Superimposing a still picture in a "Memory Stick" on a moving picture – MEMORY MIX

Before operation

Insert a recorded "Memory Stick" and a mini DV tape to be recorded into your camcorder.

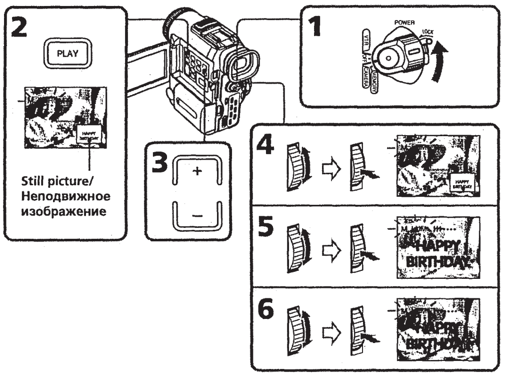
(1) Set the POWER switch to CAMERA.
(2) Press MEMORY PLAY in the standby mode.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(3) Press MEMORY+/– or +/– on the Remote Commander to select the still picture you want to superimpose.
To see the previous image, press MEMORY – or – on the Remote Commander. To see the next image, press MEMORY+ or + on the Remote Commander.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ←→ M. LUMI ←→ C. CHROM
(5) Press the SEL/PUSH EXEC dial.
The still picture is superimposed on the moving picture.
(6) Turn the SEL/PUSH EXEC dial to adjust the effect.
(7) Press START/STOP to start recording.

Наложение неподвижного изображения из "Memory Stick" на подвижное изображение – MEMORY MIX

Перед началом работы

Вставьте в видеокамеру "Memory Stick" с записью и ленту мини DV для записи.

(1) Установите переключатель POWER в положение CAMERA.
(2) Нажмите кнопку MEMORY PLAY в режиме ожидания.
Последнее записанное или скомбинированное изображение появится в нижней части экрана в виде крохотного изображения.
(3) Нажмите кнопку MEMORY +/- или кнопку +/- на пульте дистанционного управления для выбора неподвижного изображения, которое нужно наложить. Чтобы просмотреть предыдущее изображение, нажмите кнопку MEMORY - или - на пульте дистанционного управления. Чтобы просмотреть следующее изображение, нажмите кнопку MEMORY + или + на пульте дистанционного управления.
(4) Поверните диск SEL/PUSH EXEC для выбора нужного режима.
Режим будет изменяться следующим образом:
M. CHROM ←→ M. LUMI ←→ C. CHROM
(5) Нажмите диск SEL/PUSH EXEC.
Неподвижное изображение накладывается на подвижное изображение.
(6) Поверните диск SEL/PUSH EXEC для регулировки изображения.
(7) Нажмите кнопку START/STOP для начала записи.



Superimposing a still picture in a "Memory Stick" on a moving picture – MEMORY MIX

Items to be adjusted

M. CHROM	The colour (blue) scheme of the area in the still picture which is to be swapped with a moving picture
M. LUMI	The colour (bright) scheme of the area in the still picture which is to be swapped with a moving picture
C. CHROM	The colour (blue) scheme of the area in the moving picture which is to be swapped with a still picture

The fewer bars there are on the screen, the stronger the effect.

To change the still picture to be superimposed

Press MEMORY +/– or +/– on the Remote Commander after step 6.

To change the mode setting

Press SEL/PUSH EXEC dial after step 6, and repeat the procedure from step 4.

To cancel M. CHROM/M. LUMI/C. CHROM

Press MEMORY PLAY.

During recording
You cannot change the mode setting.

The "Memory Stick" supplied with your camcorder has stored 20 images
- For M. CHROM: 18 images (such as a frame) DSC00001 to DSC00018
- For C. CHROM: two images (such as a background) DSC00019 to DSC00020

Sample images
Sample images stored in the "Memory Stick" supplied with your camcorder are protected (p. 146).

If a still picture to be superimposed has lots of white areas
The thumbnail image may not be displayed clearly.

Image data modified with personal computers or shot with other equipment
You may not be able to play them back with your camcorder.

Наложение неподвижного изображения из "Memory Stick" на подвижное изображение – MEMORY MIX

Элементы для регулировки

M CHROM	Цветовая гамма (синяя) области неподвижного изображения, которую нужно заменить подвижным изображением
M. LUMI	Цветовая гамма (светлая) области неподвижного изображения, которую нужно заменить подвижным изображением
C. CHROM	Цветовая гамма (синяя) области подвижного изображения, которую нужно заменить неподвижным изображением

Чем меньше полос на экране, тем сильнее эффект.

Для изменения неподвижного изображения, которое требуется наложить

Нажмите кнопку MEMORY +/- или +/- на пульте дистанционного управления после пункта 6

Для изменения установки режима

Нажмите на диск SEL/PUSH EXEC после пункта 6 и повторите процедуру с пункта 4.

Для отмены установки M. CHROM/M. LUMI/C. CHROM

Нажмите кнопку MEMORY PLAY

Во время записи
Невозможно изменить установку режима.

"Memory Stick", прилагаемая к видеокамере, вмещает 20 изображений
- Для M. CHROM: 18 изображений (таких как кадр) с DSC00001 по DSC00018
- Для C. CHROM: два изображения (таких как фон) с DSC00019 по DSC00020

Образцы изображений
Образцы изображений, сохраненные на "Memory Stick", прилагаемой к видеокамере, защищены (стр. 146).

Если в неподвижном изображении, которое требуется наложить, существует много областей белого цвета
Мини-изображение может отображаться не совсем отчетливо.

Данные изображения, измененные с помощью персонального компьютера или снятые с помощью другой аппаратуры
Они могут не воспроизводиться на видеокамере.

Recording an image from a mini DV tape as a still image

Your camcorder can read moving picture data recorded on a mini DV tape and record it as a still image on a "Memory Stick." Your camcorder can also take in moving picture data through the input connector and record it as a still image on a "Memory Stick."

Before operation
Insert a recorded mini DV tape and a "Memory Stick" into your camcorder.

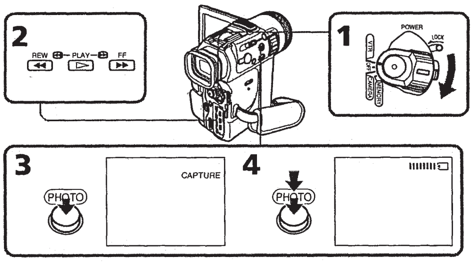
(1) Set the POWER switch to VTR.
(2) Press ►. The picture recorded on the mini DV tape is played back.
(3) Keep pressing PHOTO lightly until the picture from the mini DV tape freezes. "CAPTURE" appears on the LCD screen or in the viewfinder. Recording does not start yet.
(4) Press PHOTO deeper. The image displayed on the screen will be recorded on a "Memory Stick." Recording is complete when the bar scroll indicator disappears.

Запись изображения с ленты мини DV как неподвижного изображения

Ваша видеокамера может считывать данные движущегося изображения, записанные на ленте мини DV, и записывать их как неподвижное изображение на "Memory Stick". Видеокамера также может принимать данные движущегося изображения через входной разъем и записывать их как неподвижное изображение на "Memory Stick".

Перед началом работы
Вставьте записанную ленту мини DV и "Memory Stick" в видеокамеру.

(1) Установите переключатель POWER в положение VTR.
(2) Нажмите кнопку ►. Начнется воспроизведение изображения, записанного на ленте мини DV.
(3) Держите слегка нажатой кнопку PHOTO, пока изображение с ленты мини DV не станет неподвижным. На ЖКД экране или в видоискателе появится индикация "CAPTURE". Запись пока еще не начинается.
(4) Нажмите кнопку PHOTO сильнее. Изображение на экране будет записано на "Memory Stick". Запись будет завершена, когда исчезнет индикатор в виде полоски.



Recording an image from a mini DV tape as a still image

Image size of still pictures
Image size is automatically set to 640 × 480.

When the access lamp is lit or flashing
Never shake or strike the unit. As well do not turn the power off , eject a "Memory Stick" or remove the battery pack. Otherwise, the image data breakdown may occur.

If "⊠" appears on the LCD screen or in the viewfinder
The inserted "Memory Stick" is incompatible with your camcorder because its format does not conform with your camcorder. Check the format of the "Memory Stick."

If you press PHOTO lightly in the playback mode
Your camcorder stops momentarily.

Sound recorded on a mini DV tape
You cannot record the sound from a mini DV tape.

Запись изображения с ленты мини DV как неподвижного изображения

Размер неподвижных изображений
Размер изображений автоматически устанавливается равным 640 × 480

Если лампочка обращения ACCESS горит или мигает
Не трясите и не стучите по видеокамере. Также не выключайте питание, не извлекайте "Memory Stick" из отсека и не снимайте батарейный блок. В противном случае, данные изображения могут быть повреждены.

Если на ЖКД экране или в видоискателе появится индикация "⊠"
Установлена "Memory Stick", которая не совместима с видеокамерой, поскольку ее формат не соответствует формату видеокамеры. Проверьте формат "Memory Stick".

Если в режиме воспроизведения слегка нажать кнопку PHOTO
Видеокамера сразу же остановится.

Звук, записанный на ленту мини DV
Звук нельзя записывать с ленты мини DV.

Recording an image from a mini DV tape as a still image

Titles have already recorded on mini DV tapes
You cannot record the titles on "Memory Stick"s. The title does not appear while you are recording a still picture with PHOTO.

When you press PHOTO on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

Recording a still image from other equipment

(1) Set the POWER switch to VTR and set DISPLAY in ETC to LCD in the menu settings.
(2) Play back the recorded tape, or turn the TV on to see the desired programme.
The picture from other equipment appears on the LCD screen or in the viewfinder.
(3) Follow steps 3 and 4 on page 132.

When recording the image through the AUDIO/VIDEO jack

Запись изображения с ленты мини DV как неподвижного изображения

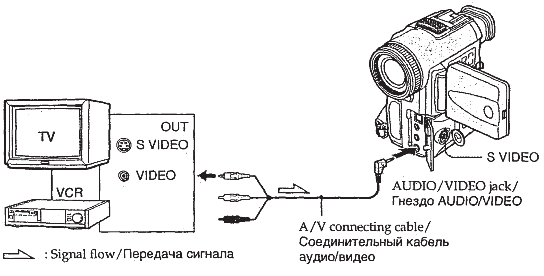
Титры, ранее записанные на ленты мини DV
Титры нельзя записывать на "Memory Stick". Титр не появляется во время записи неподвижного изображения с помощью кнопки PHOTO.

Если нажать кнопку PHOTO на пульте дистанционного управления
При нажатии этой кнопки видеокамера сразу же запишет изображение на экране.

Запись неподвижного изображения с другого оборудования

(1) Установите переключатель POWER в положение VTR и в установках меню установите DISPLAY в меню ETC в положение LCD.
(2) Начните воспроизведение записанной ленты или включите телевизор для просмотра желаемой программы. Изображение с другого оборудования появится на экране ЖКД или в видоискателе.
(3) Выполните пункты 3 и 4 на стр. 132.

При записи изображения через гнездо AUDIO/VIDEO



Connect the yellow plug of the A/V connecting cable supplied with your camcorder to the video jack on the VCR or the TV

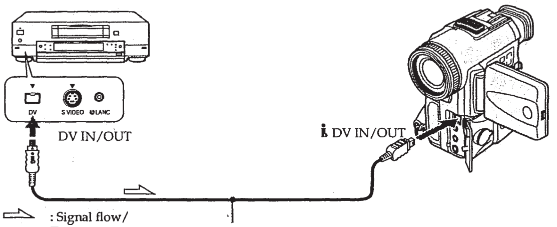
Подсоедините желтый штекер соединительного кабеля аудио/видео, прилагаемого к видеокамере, к видеогнезду на видеомагнитофоне или телевизоре.

Recording an image from a mini DV tape as a still image

When recording the image through the i DV IN/OUT jack

Запись изображения с ленты мини DV как неподвижного изображения

При записи изображения через гнездо i DV IN/OUT



: Signal flow/
Передача сигнала

i.LINK cable (DV connecting cable) (not supplied)/
Кабель i.LINK (соединительный кабель DV) (не входит в комплект)

Connect using an S video cable (not supplied) to obtain high-quality pictures
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (not supplied) to the S (S1) video jacks of both your camcorder and the VCR/TV.
This connection produces higher quality DV format pictures.

Соединение с помощью видеокабеля S (не входит в комплект) для получения высококачественных изображений
При таком соединении не понадобится подсоединять желтый штекер (видео) соединительного кабеля аудио/видео.
Подсоедините видеокабель S (не входит в комплект) к видеогнездам S (S1) на видеокамере и видеомагнитофоне или телевизоре.
Это соединение позволяет получить высококачественное изображение формата DV

Copying still images from a mini DV tape – Photo save

Using the search function, you can automatically take in only still images from mini DV tapes and record them on a "Memory Stick" in sequence.

Before operation
- Insert a recorded mini DV tape into your camcorder and rewind the tape.
- Insert a "Memory Stick" into your camcorder.

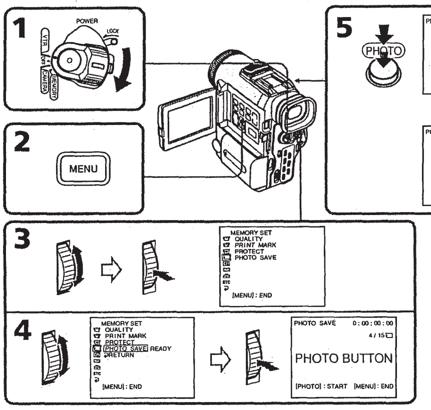
(1) Set the POWER switch to VTR.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select PHOTO SAVE, then press the dial. "PHOTO BUTTON" appears on the LCD screen or in the viewfinder.
(5) Press PHOTO deeper. The still image from the mini DV tape is recorded on a "Memory Stick." The number of still images copied is displayed. "END" is displayed when copying is completed.

Копирование неподвижных изображений с ленты мини DV – Сохранение в памяти фотоснимков

С помощью функции поиска можно автоматически делать снимки с лент мини DV и последовательно записывать их на "Memory Stick".

Перед началом работы
- Вставьте записанную ленту мини DV в видеокамеру и перемотайте ее назад.
- Вставьте "Memory Stick" в видеокамеру

(1) Установите переключатель POWER в положение VTR.
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора установки ▭, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки PHOTO SAVE, затем нажмите на диск. На экране ЖКД или в видоискателе появится индикация "PHOTO BUTTON".
(5) Нажмите кнопку PHOTO сильнее. Неподвижное изображение на ленте мини DV запишется на "Memory Stick". Отобразится количество скопированных неподвижных изображений По завершении копирования будет отображена индикация "END".



Copying still images from a mini DV tape – Photo save

To stop or end copying
Press MENU.

When the memory of the "Memory Stick" is full
"MEMORY FULL" appears on the LCD screen or in the viewfinder, and the copying stops. Insert another "Memory Stick" and repeat the procedure from step 2.

Image size of still pictures
Image size is automatically set to 640 × 480.

When the access lamp is lit or flashing
Never shake or strike your camcorder. As well do not turn the power off, eject a "Memory Stick" or remove the battery pack. Otherwise, the image data breakdown may occur.

To record all the images recorded on the mini DV tape
Rewind the tape all the way back and start copying.

If the write-protect tab on the "Memory Stick" is set to LOCK
"NOT READY" appears when you select the item in the menu settings.

When you change "Memory Stick"s in the middle of copying
Your camcorder resumes copying from the last image recorded on the previous "Memory Stick."

Копирование неподвижных изображений с ленты мини DV – Сохранение в памяти фотоснимков

Для остановки или прекращения копирования
Нажмите кнопку MENU.

В случае переполнения "Memory Stick"
На экране ЖКД или в видоискателе появится индикация "MEMORY FULL", и копирование прекратится. Вставьте другую "Memory Stick" и повторите процедуру с пункта 2.

Размер неподвижных изображений
Размер изображений автоматически устанавливается равным 640 × 480.

Если лампочка обращения ACCESS горит или мигает
Не трясите и не стучите по видеокамере. Также не выключайте питание, не извлекайте "Memory Stick" из отсека и не снимайте батарейный блок. В противном случае, данные изображения могут быть повреждены.

Для записи всех изображений, записанных на ленте мини DV
Перемотайте ленту назад до конца и начните копирование.

Если лепесток защиты от записи на "Memory Stick" установлен в положение LOCK
При выборе элемента в установках меню появится индикация "NOT READY".

Если заменить "Memory Stick" в середине копирования
Видеокамера продолжит копирование с последнего изображения, записанного на предыдущей "Memory Stick"

Viewing a still picture – Memory photo playback

You can play back still images recorded on a "Memory Stick." You can also play back six images at a time by selecting the index screen.

Before operation
Insert a "Memory Stick" into your camcorder.

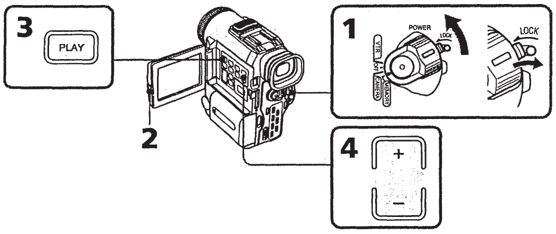
(1) Set the POWER switch to VTR or MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press OPEN to open the LCD panel.
(3) Press MEMORY PLAY. The last recorded image is displayed.
(4) Press MEMORY +/– or +/– on the Remote Commander to select the desired still image. To see the previous image, press MEMORY – or – on the Remote Commander. To see the next image, press MEMORY + or + on the Remote Commander.

Просмотр неподвижного изображения – Воспроизведение фотоснимков из памяти

Можно воспроизводить неподвижные изображения, записанные на "Memory Stick". Можно также воспроизводить одновременно шесть изображений путем выбора индексного экрана.

Перед началом работы
Вставьте "Memory Stick" в видеокамеру.

(1) Установите переключатель POWER в положение VTR или MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите OPEN, чтобы открыть панель ЖКД.
(3) Нажмите кнопку MEMORY PLAY. Будет отображено последнее записанное изображение.
(4) Нажмите кнопку MEMORY +/- или кнопку +/- на пульте дистанционного управления для выбора требуемого неподвижного изображения. Чтобы просмотреть предыдущее изображение, нажмите кнопку MEMORY - или - на пульте дистанционного управления. Чтобы просмотреть следующее изображение, нажмите кнопку MEMORY + или + на пульте дистанционного управления.



To stop memory photo playback
Press MEMORY PLAY again.

Для остановки воспроизведения фотоснимков из памяти
Нажмите кнопку MEMORY PLAY еще раз.

To play back recorded images on a TV screen

- Connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder before operation.
- When operating memory photo playback on a TV or on the LCD screen, the image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.
- The message "⊠ NO FILE" appears when no image is recorded on the "Memory Stick."

Image data modified with personal computers or shot with other equipment
You may not be able to play them back with your camcorder.

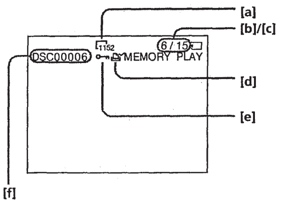
Screen indicators during still image playback

Для воспроизведения записанных изображений на экране телевизора

- Перед началом воспроизведения подсоедините видеокамеру к телевизору с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере.
- При воспроизведении фотоснимков из памяти на экране телевизора или ЖКД качество изображения может ухудшиться. Однако это не является неисправностью. Качество данных изображения остается по-прежнему хорошим.
- Перед началом воспроизведения уменьшите громкость звука на телевизоре, так как в противном случае в громкоговорителях телевизора могут быть слышны шумы (завывание).
- Если на "Memory Stick" отсутствуют записанные изображения, появится сообщение "⊠ NO FILE".

Данные изображения, измененные с помощью персонального компьютера или снятые с помощью другой аппаратуры
Они могут не воспроизводиться на видеокамере.

Экранные индикаторы во время воспроизведения неподвижных изображений



[a] Image size
[b] Image number
[c] Total number of recorded images
[d] Print mark
[e] Protect indicator
[f] Data file name

[a] Размер изображения
[b] Номер изображения
[c] Общее количество записанных изображений
[d] Печатный знак
[e] Индикатор защиты
[f] Имя файла данных

Playing back six recorded images at a time (index screen)

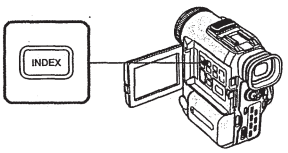
You can play back six recorded images at a time. This function is especially useful when searching for a particular image.

(1) Set the POWER switch to VTR or MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press MEMORY INDEX to display the index screen.

Воспроизведение шести записанных изображений одновременно (индексный экран)

Можно воспроизводить 6 записанных изображений одновременно. Эта функция особенно полезна при поиске определенного изображения.

(1) Установите переключатель POWER в положение VTR или MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку MEMORY INDEX для отображения индексного экрана.

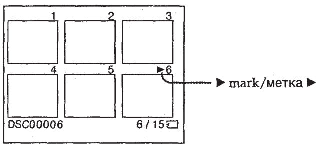


A red ▶ mark appears above the image that is displayed before changing to the index screen mode.

MEMORY – : to display the previous six images
MEMORY + : to display the following six images

Над изображением появится красная метка ▶, которая отображается перед переключением в режим индексного экрана.

MEMORY - : для отображения шести предыдущих изображений
MEMORY +: для отображения шести следующих изображений



To return to the normal playback screen (single screen)
Press MEMORY +/– to move the ▶ mark to the image you want to display on full screen, then press MEMORY PLAY.

Для возврата в экран обычного воспроизведения (единый экран)
Нажмите кнопку MEMORY +/- для перемещения метки ▶ к изображению, которое необходимо отобразить во весь экран, затем нажмите кнопку MEMORY PLAY.

Files modified with personal computers
These files may not be displayed on the index screen Image files shot with other equipment may not be displayed on the index screen either.

Note
When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded on the "Memory Stick." These numbers are different from the data file names.

Viewing the recorded images using a personal computer

The image data recorded with your camcorder is compressed in the JPEG format. If you use the application software, "PictureGear 3.2Lite" supplied with your camcorder, you can see images recorded on a "Memory Stick" on a computer screen. Use the serial port adaptor for Memory Stick supplied with your camcorder, the Memory Stick/PC card kit or PC card adaptor for Memory Stick (not supplied) for this operation. For detailed instructions on operation, refer to the operating instructions of the serial port adaptor, Memory Stick/PC card kit or PC card adaptor for Memory Stick and application software.

Файлы, измененные с помощью персональных компьютеров
Эти файлы могут не отображаться на индексном экране. Файлы изображений, снятых с помощью другого оборудования, также могут не отображаться на индексном экране.

Примечание
При отображении индексного экрана над каждым изображением показывается номер. Он указывает последовательность, в которой изображения были записаны на "Memory Stick". Эти номера отличаются от имен файлов данных.

Просмотр записанных изображений с помощью персонального компьютера

Данные изображений, записанные с помощью видеокамеры, сжимаются в формате JPEG. С помощью поставляемого с видеокамерой прикладного программного обеспечения "PictureGear 3.2Lite" можно просматривать изображения, записанные на "Memory Stick", на экране компьютера. Для этой операции с Memory Stick, прилагаемой к видеокамере, используйте адаптер последовательного порта, или же комплект Memory Stick/PC card или адаптер PC card - для Memory Stick (которая не входит в комплект) Подробные указания по этой операции см. в инструкциях по эксплуатации адаптера последовательного порта, комплекта Memory Stick/PC card или адаптера PC card для Memory Stick и прикладного программного обеспечения.

Copying the image recorded on "Memory Stick"s to mini DV tapes

You can copy still images or titles recorded on a "Memory Stick" and record them to a mini DV tape.

Before operation
Insert a mini DV tape for recording and a "Memory Stick" into your camcorder.

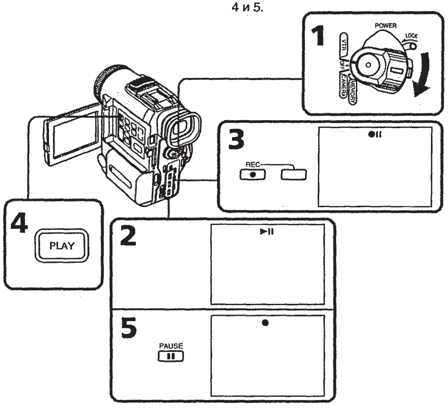
(1) Set the POWER switch to VTR.
(2) Using the video control buttons, search a point where you want to record the desired still image. Set the mini DV tape to playback pause mode.
(3) Press ● REC and the button on its right simultaneously on your camcorder. The mini DV tape is set to the recording pause mode.
(4) Press MEMORY PLAY to play back the still image you want to copy.
(5) Press **II** to start recording and press **II** again to stop.
(6) If you have more to copy, repeat steps 4 and 5.

Копирование изображений, записанных в "Memory Stick", на ленты мини DV

Можно копировать неподвижные изображения или титры, записанные на "Memory Stick", и записывать их на ленту мини DV.

Перед началом работы
Вставьте ленту мини DV для записи и "Memory Stick" в видеокамеру.

(1) Установите переключатель POWER в положение VTR.
(2) С помощью кнопок видеоконтроля найдите место, откуда необходимо начать запись требуемого неподвижного изображения. Установите ленту мини DV в режим паузы воспроизведения.
(3) Одновременно нажмите кнопку ● REC и кнопку справа от нее на видеокамере. Лента мини DV установлена в режим паузы записи.
(4) Нажмите кнопку MEMORY PLAY для воспроизведения неподвижного изображения, которое необходимо скопировать.
(5) Нажмите кнопку **II**, чтобы начать запись. Для останова записи снова нажмите кнопку **II**.
(6) Если необходимо также скопировать другие изображения, повторите пункты 4 и 5.



Copying the image recorded on "Memory Stick"s to mini DV tapes

To stop copying in the middle
Press ■.

During copying
You cannot operate the following buttons: MEMORY PLAY, MEMORY INDEX, MEMORY DELETE, MEMORY +, and MEMORY –.

Note on the index screen
You cannot record the index screen.

Image data modified with personal computers or shot with other equipment
You may not be able to copy them with your camcorder.

If you press DISPLAY in the standby or recording mode
You can see memory playback and the file name indicators in addition to the indicators pertinent to mini DV tapes, such as the time code indicator.

Копирование изображений, записанных в "Memory Stick", на ленты мини DV

Для остановки копирования в середине
Нажмите кнопку ■.

Во время копирования
Нельзя использовать следующие кнопки: MEMORY PLAY, MEMORY INDEX, MEMORY DELETE, MEMORY + и MEMORY -.

Замечание относительно индексного экрана
Индексный экран невозможно записать.

Данные изображения, измененные с помощью персонального компьютера или снятые с помощью другой аппаратуры
Возможно, их нельзя будет скопировать с помощью видеокамеры.

Если нажать кнопку DISPLAY в режиме ожидания или записи
Кроме индикаторов, относящихся к лентам мини DV, например, индикатор кода времени, можно увидеть индикаторы воспроизведения из памяти и имени файла.

Playing back images continuously – SLIDE SHOW

You can automatically play back images in sequence. This function is useful especially when checking recorded images or during a presentation.

Before operation
Insert a "Memory Stick" into your camcorder.

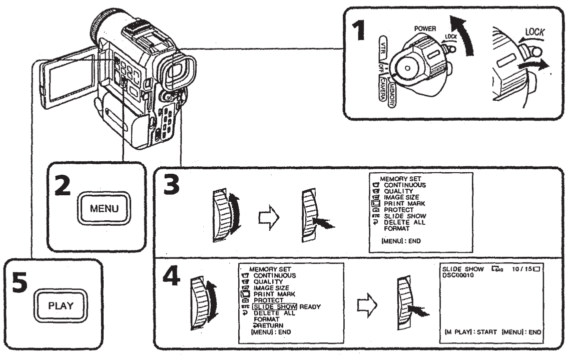
(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select □, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select SLIDE SHOW, then press the dial.
(5) Press MEMORY PLAY. Your camcorder plays back the images recorded on a "Memory Stick" in sequence.

Воспроизведение изображений в непрерывной последовательности - SLIDE SHOW

Можно автоматически последовательно воспроизводить изображения. Эта функция особенно полезна при проверке записанных изображений или во время презентаций.

Перед началом работы
Вставьте "Memory Stick" в видеокамеру

(1) Установите переключатель POWER в положение MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора установки □, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки SLIDE SHOW, затем нажмите на диск.
(5) Нажмите кнопку MEMORY PLAY. Видеокамера последовательно воспроизведет изображения, записанные на "Memory Stick".


1
POWER
LOCK
VTR
OFF
CAMERA
MEMORY
LOCK
2
MENU
3
MEMORY SET
CONTINUOUS
QUALITY
IMAGE SIZE
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
[MENU] : END
4
MEMORY SET
CONTINUOUS
QUALITY
IMAGE SIZE
PRINT MARK
PROTECT
SLIDE SHOW READY
DELETE ALL
FORMAT
RETURN
[MENU] : END
SLIDE SHOW 640 10 / 15
DSC00010
[M PLAY] : START [MENU] : END
5
PLAY

Playing back images continuously – SLIDE SHOW

To stop or end the slide show
Press MENU.

To pause during a slide show
Press MEMORY PLAY.

To start the slide show from a particular image
Select the desired image using MEMORY +/– buttons before step 2.

To view the recorded images on TV
Connect your camcorder to a TV with the A/V connecting cable supplied with your camcorder before operation.

If you change the "Memory Stick" during operation
The slide show does not operate. If you change the "Memory Stick," be sure to follow the steps again from the beginning.

Воспроизведение изображений в непрерывной последовательности – SLIDE SHOW

Для остановки или прекращения демонстрации слайдов
Нажмите кнопку MENU.

Для того чтобы сделать паузу во время демонстрации слайдов
Нажмите кнопку MEMORY PLAY.

Для того чтобы начать демонстрацию слайдов с определенного изображения
Перед пунктом 2 выберите требуемое изображение с помощью кнопок MEMORY +/-.

Для просмотра записанных изображений на экране телевизора
Перед началом воспроизведения подсоедините видеокамеру к телевизору с помощью соединительного кабеля аудио/видео, который прилагается к видеокамере

Если заменить "Memory Stick" во время работы
Функция показа слайдов не будет работать. В случае замены "Memory Stick" обязательно выполните все указанные действия с начала.

Preventing accidental erasure – Image protection

To prevent accidental erasure of important images, you can protect selected images.

Before operation
Insert a "Memory Stick" into your camcorder.

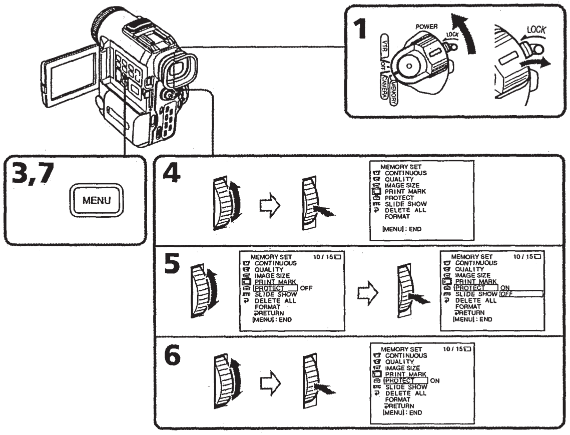
(1) Set the POWER switch to MEMORY or VTR. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Play back the image you want to protect (p. 138).
(3) Press MENU to display the menu.
(4) Turn the SEL/PUSH EXEC dial to select □, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select PROTECT, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(7) Press MENU to erase the menu display. The "⊶" mark is displayed beside the data file name of the protected image.

Предотвращение случайного стирания – Защита изображения

Для предотвращения случайного стирания важных изображений можно защитить отдельные изображения

Перед началом работы
Вставьте "Memory Stick" в видеокамеру

(1) Установите переключатель POWER в положение MEMORY или VTR. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Воспроизведите изображение, которое необходимо защитить (стр. 138).
(3) Нажмите кнопку MENU для отображения меню.
(4) Поверните диск SEL/PUSH EXEC для выбора установки □, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки PROTECT, затем нажмите на диск.
(6) Поверните диск SEL/PUSH EXEC для выбора установки ON, затем нажмите на диск.
(7) Нажмите кнопку MENU для удаления индикации меню. Рядом с названием файла защищенного изображения появится знак "⊶".


1
POWER
LOCK
VTR
OFF
CAMERA
MEMORY
LOCK
3,7
MENU
4
MEMORY SET
CONTINUOUS
QUALITY
IMAGE SIZE
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
[MENU] : END
5
MEMORY SET 10 / 15
CONTINUOUS
QUALITY
IMAGE SIZE
PRINT MARK
PROTECT OFF
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU] : END
MEMORY SET 10 / 15
CONTINUOUS
QUALITY
IMAGE SIZE
PRINT MARK
PROTECT ON
SLIDE SHOW OFF
DELETE ALL
FORMAT
RETURN
[MENU] : END
6
MEMORY SET 10 / 15
CONTINUOUS
QUALITY
IMAGE SIZE
PRINT MARK
PROTECT ON
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU] : END

Preventing accidental erasure – Image protection

To cancel image protection
Select OFF in step 6, then press the SEL/PUSH EXEC dial.

Note

Formatting erases all information on the "Memory Stick," including the protected image data. Check the contents of the "Memory Stick" before formatting.

If the write-protect tab on the "Memory Stick" is set to LOCK

You cannot carry out image protection.

Предотвращение случайного стирания – Защита изображения

Для отмены защиты изображения
Выберите установку OFF в пункте 6, затем нажмите на диск SEL/PUSH EXEC.

ПРИМЕЧАНИЕ

Во время форматирования удаляются все данные на "Memory Stick", включая данные защищенных изображений. Перед форматированием проверьте содержимое "Memory Stick".

Если лепесток защиты от записи на "Memory Stick" установлен в положение LOCK

Защиту изображения невозможно будет выполнить.

Deleting images

You can delete images stored in a "Memory Stick."

Deleting selected images

Before operation

Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VTR. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Play back the image you want to delete (p. 138).
(3) Press MEMORY DELETE. "DELETE?" appears on the LCD screen or in the viewfinder.
(4) Press MEMORY DELETE again. The selected image is deleted.

Удаление изображений

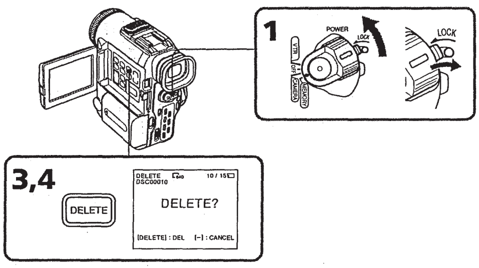
Можно удалить изображения, записанные в "Memory Stick".

Удаление выбранных изображений

Перед началом работы

Вставьте "Memory Stick" в видеокамеру.

(1) Установите переключатель POWER в положение MEMORY или VTR. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Воспроизведите изображение, которое необходимо удалить (стр. 138).
(3) Нажмите кнопку MEMORY DELETE. На экране ЖКД или в видоискателе появится индикация "DELETE?".
(4) Нажмите кнопку MEMORY DELETE еще раз. Выбранное изображение будет удалено.



To cancel deleting an image
Press MEMORY – in step 4.

To delete an image displayed on the index screen
Press MEMORY +/– to move the ▶ indicator to the desired image and follow steps 3 and 4.

Для отмены удаления изображения
Нажмите кнопку MEMORY - в пункте 4.

Для удаления изображения, отображаемого на индексном экране
Нажмите кнопку MEMORY +/- для перемещения индикатора ▶ к нужному изображению и выполните действия пунктов 3 и 4.

Notes

- To delete a protected image, first cancel image protection.
- Once you delete an image, you cannot restore it. Check the images to be deleted carefully before deleting them.
- You cannot delete images if the write-protect tab on a "Memory Stick" is set to LOCK.

Deleting all the images

You can delete all the unprotected images in a "Memory Stick."

Before operation

Insert a "Memory Stick" into your camcorder.

Примечания

- Для того чтобы удалить защищенное изображение, сначала отмените защиту изображения.
- После удаления изображение невозможно будет восстановить. Перед удалением внимательно проверьте изображения.
- Удаление изображений невозможно выполнить, если защитный лепесток на "Memory Stick" установлен в положение LOCK.

Удаление всех изображений

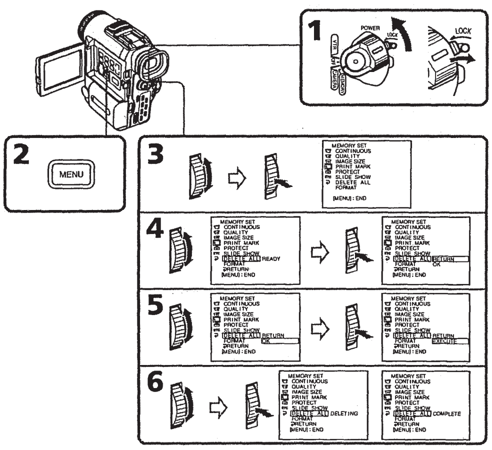
Можно удалить все незащищенные изображение на "Memory Stick".

Перед началом работы

Вставьте "Memory Stick" в видеокамеру.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select 🗔, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select DELETE ALL, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select OK, then press the dial. "OK" changes to "EXECUTE."
(6) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial. "DELETING" appears on the LCD screen or in the viewfinder. When all the unprotected images are deleted, "COMPLETE" is displayed.

(1) Установите переключатель POWER в положение MEMORY. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Нажмите кнопку MENU для отображения меню.
(3) Поверните диск SEL/PUSH EXEC для выбора установки 🗔, затем нажмите на диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки DELETE ALL, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки OK, затем нажмите на диск. Индикация "OK" изменится на индикацию "EXECUTE."
(6) Поверните диск SEL/PUSH EXEC для выбора установки EXECUTE, затем нажмите на диск. На экране ЖКД или в видоискателе появится индикация "DELETING". Когда все незащищенные изображения будут удалены, появится индикация "COMPLETE".



Deleting images

To cancel deleting all the images in the "Memory Stick"

Select RETURN in step 4, then press the SEL/PUSH EXEC dial.

While "DELETING" appears

Do not turn the POWER switch or press any buttons.

Удаление изображений

Для отмены удаления всех изображений на "Memory Stick"

Выберите установку RETURN в пункте 4, затем нажмите на диск SEL/PUSH EXEC.

Во время отображения индикации "DELETING"

Не изменяйте положение переключателя POWER и не нажимайте никаких кнопок.

Writing a print mark – PRINT MARK

You can specify the recorded still image to print out. This function is useful for printing out still images later.
Your camcorder conforms with the DPOF (Digital Print Order Format) standard for specifying the still images to print out.

Before operation

Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VTR. Make sure that the LOCK switch is set to the right (unlock) position.
(2) Play back the image to be printed out (p. 138).
(3) Press MENU to display the menu.
(4) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select PRINT MARK, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(7) Press MENU to erase the menu display. The "⎙" mark is displayed beside the data file name of the image with a print mark.

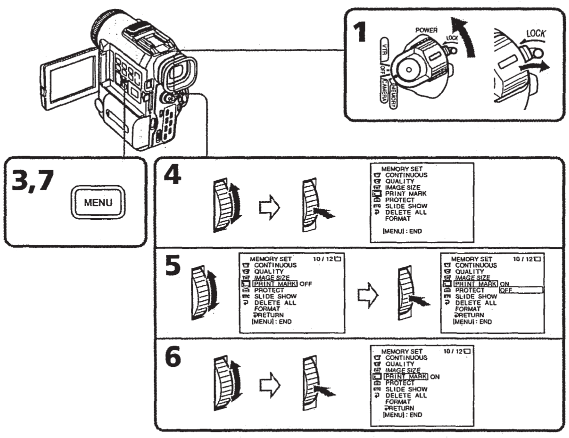
Запись печатных знаков – PRINT MARK

Можно указать записанное неподвижное изображение, которое необходимо распечатать Эта функция полезна для последующей печати неподвижных изображений.
Видеокамера соответствует требованиям стандарта DPOF (цифровой формат порядка печати) для подачи неподвижных изображений для печати.

Перед началом работы

Вставьте "Memory Stick" в видеокамеру.

(1) Установите переключатель POWER в положение MEMORY или VTR. Убедитесь, что переключатель LOCK установлен в правое положение (незаблокированное).
(2) Воспроизведите изображение, которое необходимо распечатать (стр. 138).
(3) Нажмите кнопку MENU для отображения меню.
(4) Поверните диск SEL/PUSH EXEC для выбора установки ▭, затем нажмите на диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки PRINT MARK, затем нажмите на диск.
(6) Поверните диск SEL/PUSH EXEC для выбора установки ON, затем нажмите на диск.
(7) Нажмите кнопку MENU для удаления индикации меню. Рядом с названием файла изображения с печатным знаком появится знак "⎙".



Writing a print mark – PRINT MARK

To cancel writing print marks

Select OFF in step 6, then press the SEL/PUSH EXEC dial.

If the write-protect tab on the "Memory Stick" is set to LOCK

You cannot write print marks on still images.

Запись печатных знаков – PRINT MARK

Для отмены записи печатных знаков

Выберите установку OFF в пункте 6, затем нажмите на диск SEL/PUSH EXEC.

Если лепесток защиты от записи на "Memory Stick" установлен в положение LOCK

Запись печатных знаков на неподвижных изображениях будет невозможна.

– Additional Information –

Usable cassettes

Selecting cassette types

You can use the MiniDV mini DV cassette only*. You cannot use any other 8 8 mm, Hi8 Hi8, D Digital8, VHS VHS, VHSC VHSC, S-VHS S-VHS, S-VHSC S-VHSC, β Betamax or DV DV cassette.

* There are two types of mini DV cassettes: with cassette memory and without cassette memory Tapes with cassette memory have CM (Cassette Memory) mark. Sony recommends that you use a tape with CM mark to enjoy your camcorder fully.

The IC memory is built in the cassette with cassette memory. Using this IC memory, your camcorder can read, write, and search data such as the date of recording or titles. The functions using the cassette memory require successive signals recorded on the tape. If the tape has a blank portion in the beginning or between the recorded portions, a title may not be displayed properly or the search functions may not work correctly. Not to make any blank portion on the tape, press END SEARCH to return to the end of the recorded portion before you begin the next recording when:
– You have ejected the cassette while recording.
– You have played back the tape in VTR mode.
If there is a blank portion or discontinuous signal on your tape, re-record from the beginning to the end of the tape concerning above.
When you record, using a digital video camera recorder without a cassette memory function, on a tape recorded by one with the cassette memory function, the same result may occur.

CM4K mark on the cassette

The memory capacity of tapes marked with CM4K is 4KB. Your camcorder can accommodate up to 16KB. 16KB tape is marked with CM16K.

– Дополнительная информация –

Используемые кассеты

Выбор типа кассет

Можно использовать только кассеты MiniDV мини DV*. Нельзя использовать любые другие кассеты типа 8 8 мм, Hi8 Hi8, D Digital8, VHS VHS, VHSC VHSC, S-VHS S-VHS, S-VHSC S-VHSC, β Betamax или DV DV.

* Существует два типа кассет мини DV: с кассетной памятью и без кассетной памяти. На лентах с кассетной памятью имеется знак CM (кассетная память). Корпорация Sony рекомендует использовать ленту со знаком CM, так как этот тип наиболее подходит для данной видеокамеры.

На данном типе кассет установлена память в виде интегральной схемы. Видеокамера может считывать и записывать данные, такие как даты записи или титры и т.д на эту интегральную схему памяти. Для функций, которые используют кассетную память, необходимы последовательные сигналы, записанные на ленту. Если на ленте имеется незаписанный участок в начале или между записанными частями, то титр может отображаться с искажениями или функция поиска может работать неправильно.
Для того, чтобы не допустить появления незаписанных участков на ленте, нажмите кнопку END SEARCH для возврата к концу записанного участка перед началом следующей записи, если:
– Кассета была извлечена во время записи.
– Лента воспроизводилась в режиме VTR
Если на ленте имеется незаписанный участок или прерывающийся сигнал, выполните перезапись с начала до конца данного участка.
Такой же результат может получиться при выполнении записи с помощью цифровой видеокамеры без функции кассетной памяти на ленту, записанную с помощью функции кассетной памяти.

CM4K Знак на кассете

Емкость памяти лент со знаком CM4K равна 4 Кб Эта видеокамера может вмещать ленты с размером памяти до 16 Кб. 16 Кб лента обозначается знаком CM16K.

When you play back

Copyright signal

When playing back

Using any other video camera recorder, you cannot record on a tape that has recorded a copyright control signals for copyright protection of software which is played back on your camcorder.

When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software.
"COPY INHIBIT" appears on the LCD screen, in the viewfinder or on the TV screen if you try to record such software.
Your camcorder does not record copyright control signals on the tape when it records.

Audio mode

12-bit mode: The original sound can be recorded in stereo 1, and the new sound in stereo 2 in 32 kHz. The balance between stereo 1 and stereo 2 can be adjusted by selecting AUDIO MIX in the menu settings during playback. Both sounds can be played back.
16-bit mode: A new sound cannot be recorded but the original sound can be recorded in high quality. Moreover, it can also play back sound recorded in 32 kHz, 44.1 kHz or 48 kHz. When playing back a tape recorded in the 16-bit mode, 16BIT indicator appears on the LCD screen or in the viewfinder.

When you play back a dual sound track tape

When you play back a dual sound track tape recorded in a stereo system, set HiFi SOUND to the desired mode in the menu settings (p. 98).

При воспроизведении

Сигнал авторского права

При воспроизведении

При использовании любой другой видеокамеры нельзя выполнять запись на ленту, на которой записаны сигналы авторского права для защиты авторских прав программ, воспроизводимых на этой видеокамере.

При записи

Нельзя выполнять запись программы, которая содержит сигналы авторского права для защиты авторских прав программы, на этой видеокамере.
На экране ЖКД, в видоискателе или на экране телевизора появится индикация "COPY INHIBIT" при попытке записи такой программы.
Во время записи эта видеокамера не записывает сигналы авторского права на ленту.

Аудиорежим

12-битовый режим: Первоначальный звук может быть записан на стереофонический канал 1, а новый звук - на стереофонический канал 2 в режиме 32 кГц. Баланс между стереофоническими каналами 1 и 2 можно отрегулировать путем выбора установки AUDIO MIX в установках меню во время воспроизведения. Можно воспроизводить оба звука.
16-битовый режим: Нельзя записать новый звук, однако можно записать первоначальный звук высокого качества. Кроме того, звук можно воспроизводить в режимах 32 кГц, 44,1 кГц или 48 кГц. При воспроизведении ленты, записанной в 16-битовом режиме, на экране ЖКД или в видоискателе появляется индикатор 16BIT.

При воспроизведении ленты с двойной звуковой дорожкой

При воспроизведении ленты с двойной звуковой дорожкой, записанной на стереофонической системе, установите команду HiFi SOUND в нужный режим в установках меню (стр. 98).

Sound from speaker

HiFi SOUND mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Left sound	Main sound
2	Right sound	Sub sound

You cannot record dual sound programmes on your camcorder.

Notes on the mini DV cassette

When affixing a label on the mini DV cassette

Be sure to affix a label only on the locations as illustrated below **[a]** so as not to cause malfunction of your camcorder.

After using the mini DV cassette

Rewind the tape to the beginning, put the cassette in its case, and store it in an upright position.

If the cassette memory function does not work

Reinsert a cassette a few times. The gold-plated connector of mini DV cassettes may be dirty or dusty.

Cleaning gold-plated connector

If the gold-plated connector of mini DV cassettes is dirty or dusty, you may not operate the function using cassette memory. Clean up the gold-plated connector with cotton-wool swab, about every 10 times ejection of a cassette. **[b]**

Звук из громкоговорителя

Режим HiFi SOUND	Воспроизведение стереофонической ленты	Воспроизведение ленты с двойной звуковой дорожкой
STEREO	Стерео	Основной и вспомогательный звук
1	Звук левого канала	Основной звук
2	Звук правого канала	Вспомогательный звук

На этой видеокамере нельзя записывать программы с двойным звучанием.

Кассета мини DV

При прикреплении этикетки на кассету мини DV

Обязательно прикрепляйте этикетки только в тех местах, где показано на рисунках ниже **[a]**, чтобы они не привели к повреждению камеры.

После использование кассеты мини DV

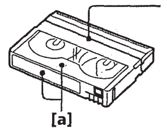
Перемотайте ленту на начало, положите кассету в футляр и храните ее в вертикальном положении.

Если не работает функция кассетной памяти

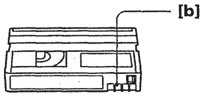
Вставьте кассету несколько раз. Позолоченный разъем кассет мини DV может быть загрязнен или запылен.

Очистка позолоченного разъема

Если позолоченный разъем кассеты мини DV загрязнен или запылен, функция кассетной памяти не работает. Очищайте позолоченный разъем с помощью хлопчатобумажного тампона, приблизительно после 10 раз изъятия кассеты. **[b]**



Do not affix a label around this border./
Не прикрепляйте этикетку вдоль этой границы.



English

Troubleshooting

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, disconnect the power source and contact your Sony dealer. If "C:□□:□□" appears on the LCD screen or in the viewfinder, the self-diagnosis display function has worked. See page 163.

In the recording mode

Symptom	Cause and/or Corrective Actions
START/STOP does not operate	• The POWER switch is not set to CAMERA. → Set it to CAMERA. (p. 20) • The tape has run out. → Rewind the tape or insert a new one. (p. 19, 36) • The write-protect tab on the cassette is set to expose the red mark. → Use a new tape or slide the tab. (p. 19) • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 176)
Recording stops in a few seconds	• START/STOP MODE is set to 5SEC or ⊥. → Set it to ♙. (p. 26)
The power goes off.	• While being operated in CAMERA mode, your camcorder has been in the standby mode for more than five minutes. → Set the POWER switch to OFF and then to CAMERA again. (p. 21) • The battery pack is dead or nearly dead. → Install a charged battery pack. (p. 14, 15)
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens. (p. 24)
The SteadyShot function does not work	• STEADYSHOT is set to OFF in the menu settings. → Set it to ON. (p. 98)
The autofocusing function does not work	• The camcorder is in manual focus mode. → Turn to auto focus mode. (p. 59) • Shooting conditions are not suitable for autofocus. → Adjust focus manually. (p. 59)
The fader function does not work.	• START/STOP MODE is set to 5SEC or ⊥. → Set it to ♙. (p. 26) • The digital effect function is working. → Cancel it. (p. 52)
The ⊗ indicator flashes on the LCD screen or in the viewfinder.	• The video heads may be dirty. → Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 177)
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background	• The contrast between the subject and background is too high. This is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• This is not a malfunction.

(continued on the following page)

Symptom	Cause and/or Corrective Actions
Some tiny white spots appear on the LCD screen or in the viewfinder.	• Slow shutter, low lux or NightShot +Slow shutter mode is activated. This is not a malfunction.
An unknown picture is displayed on the LCD screen or in the viewfinder.	• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the menu settings without a cassette inserted, your camcorder automatically starts the demonstration. → Insert a cassette. The demonstration stops. You can also cancel DEMO MODE. (p. 104)
The picture is recorded in incorrect or unnatural colours.	• NIGHTSHOT is set to ON. → Set it to OFF. (p. 29)
Picture appears too bright, and the subject does not appear on the LCD screen or in the viewfinder.	• NIGHTSHOT is set to ON in a bright place. → Set it to OFF, or use the NightShot function in a dark place. (p. 29)
The click of the shutter does not sound.	• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL. (p. 98)
A horizontal black band appears when shooting a TV screen or computer screen.	• Set STEADYSHOT to OFF in the menu settings. (p. 98)

In the playback mode

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is not set to VTR. → Set it to VTR. (p. 33) • The tape has run out. → Rewind the tape. (p. 36)
The playback picture is not clear or does not appear.	• The television's video channel is not adjusted correctly. → Adjust it.
There are horizontal lines on the picture or the playback picture is not clear or does not appear.	• The video head may be dirty. → Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 177)
No sound or only a low sound is heard when playing back a tape.	• The volume is turned to minimum. → Turn up the volume. (p. 33) • AUDIO MIX is set to ST2 in the menu settings. → Adjust AUDIO MIX. (p. 98)
The title search function does not work	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 64, 154) • CM SEARCH is set to OFF in the menu settings. → Set it to ON. (p. 98) • There is no title in the tape. → Superimpose the titles. (p. 89) • The tape has a blank portion in the recorded portion. (p. 64)

Symptom	Cause and/or Corrective Actions
Displaying the recorded date, date search function does not work	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 65, 154) • CM SEARCH is set to OFF in the menu settings. → Set it to ON. (p. 98) • The tape has a blank portion in the recorded portion. (p. 66)
The new sound added to the recorded tape is not heard.	• AUDIO MIX is set to ST1 side in the menu settings. → Adjust AUDIO MIX. (p. 98)
The title is not displayed.	• TITLE DSPL is set to OFF in the menu settings. → Set it to ON. (p. 98)
The sound is muted or images do not appear when monitoring images through TV	→ Pull out the A/V connecting cable from the AUDIO/VIDEO jack, then connect it again.

In the recording and playback modes

Symptom	Cause and/or Corrective Actions
The power does not turn on.	• The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack. (p. 14, 15) • The AC power adaptor is not connected to mains. → Connect the AC power adaptor to mains. (p. 18)
The end search function does not work.	• The tape was ejected after recording when using a tape without cassette memory. (p. 32, 37) • You have not recorded on the new cassette yet. (p. 32, 37)
The end search function does not work correctly.	• The tape has a blank portion in the beginning or middle. (p. 32)
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel. (p. 22)
The battery pack is quickly discharged.	• The operating temperature is too low. • The battery pack is not fully charged. → Charge the battery pack fully. (p. 15) • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 14)
The battery remaining indicator does not indicate the correct time.	• You have used the battery pack in an extremely hot or cold environment for a long time. • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 14) • The battery is dead. → Use a full-charged battery pack. (p. 14, 15)

(continued on the following page)

Symptom	Cause and/or Corrective Actions
The cassette cannot be removed from the holder.	• The power source is disconnected. → Connect it firmly. (p. 14, 18) • The battery is dead. → Use a charged battery pack. (p. 14, 15)
The ▣ and ⏏ indicators flash and no functions except for cassette ejection work.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 176)
C|!| indicator does not appear when using a tape with cassette memory.	• The gold-plated connector of the tape is dirty or dusty. → Clean the gold-plated connector. (p. 156)
Remaining tape indicator is not displayed	• The ▭ REMAIN is set to AUTO in the menu settings. → Set it to ON to always display the remaining tape indicator. (p. 98)

When operating using the “Memory Stick”

Symptom	Cause and/or Corrective Actions
Recording does not function.	• The “Memory Stick” has already been recorded to its full capacity. → Erase unnecessary images and record again. (p. 124, 148) • The “Memory Stick” formatted incorrectly is inserted. → Format the “Memory Stick” or use another “Memory Stick.” (p. 102) • The write-protect tab on the “Memory Stick” is set to LOCK. → Set the tab to write. (p. 115) • The “Memory Stick” is not inserted. → Insert a “Memory Stick.” (p. 118)
The image cannot be deleted	• The image is protected. → Cancel image protection. (p. 146) • The write-protect tab on the “Memory Stick” is set to LOCK. → Set the tab to write. (p. 115)
You cannot format the “Memory Stick.” Deleting all the images cannot be carried out	• The write-protect tab on the “Memory Stick” is set to LOCK. → Set the tab to write. (p. 115)
You cannot protect the image.	• The write-protect tab on the “Memory Stick” is set to LOCK. → Set the tab to write. (p. 115) • The image to be protected is not being played back. → Press MEMORY PLAY to play back the image. (p. 138)

Symptom	Cause and/or Corrective Actions
You cannot write a print mark on the still image.	• The write-protect tab on the “Memory Stick” is set to LOCK. → Set the tab to write. (p. 115) • The image that you will write a print mark is not being played back. → Press MEMORY PLAY to play back the image. (p. 138)
The photo save function does not work.	• The write-protect tab on the “Memory Stick” is set to LOCK. → Set the tab to write. (p. 115) • The battery pack is dead. → Install a charged battery pack or use the AC power adaptor instead of the battery pack. (p. 14, 18)

Others

Symptom	Cause and/or Corrective Actions
The title is not recorded.	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 89, 154) • The cassette memory is full. → Erase another title. (p. 93) • The tape is set to prevent accidental erasure. → Slide the write-protect tab so that red portion is not visible. (p. 19) • Nothing is recorded in that position on the tape. → Superimpose the title to the recorded position. (p. 89)
The cassette label is not recorded.	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 96, 154) • The cassette memory is full. → Erase some titles. (p. 93) • The tape is set to prevent accidental erasure. → Slide the write-protect tab so that red portion is not visible. (p. 19)
While editing using the i LINK cable (DV connecting cable), recording picture cannot be monitored.	• Disconnect the i.LINK cable (DV connecting cable), and connect it again.
DV synchro-editing does not function	• The input selector on the VCR is not set correctly. → Set the selector to DV input position. If you use another DV camcorder, set the power switch to VTR. • The camcorder is connected to DV equipment of other than Sony. → Operate normal editing. • Setting programme on a blank portion of the tape is attempted. → Set the programme again on a recorded portion.

(continued on the following page)

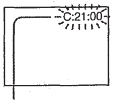
Symptom	Cause and/or Corrective Actions
The Remote Commander supplied with your camcorder does not work.	• COMMANDER is set to OFF in the menu settings. → Set it to ON. (p. 98) • Something is blocking the infrared rays. → Remove the obstacle. • The batteries are inserted in the battery holder with the + – polarities incorrectly matching the + – marks. → Insert the batteries with the correct polarity. (p. 192) • The batteries are dead. → Insert new ones. (p. 192)
The picture from a TV or VCR does not appear even when your camcorder is connected to outputs on the TV or VCR.	• DISPLAY is set to V-OUT/LCD in the menu settings. → Set it to LCD. (p. 98)
The melody or beep sounds for five seconds.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 176) • Some troubles have occurred in your camcorder. → Remove the cassette and insert it again, then operate your camcorder.
You cannot charge the battery pack.	• The POWER switch is not set to OFF. → Set it to OFF.
When charging the battery pack, the CHARGE lamp does not light	• Charging has been completed. • The battery pack is not properly installed. → Install it properly.
While charging the battery pack, the CHARGE lamp flashes	• The battery pack is not properly installed. → Install it properly. • The AC power adaptor is disconnected. → Connect it properly. • The battery pack malfunctions. → Contact your Sony dealer.
The camcorder is immediately turned off even if the amount of the battery remaining time is enough to operate.	→ Charge the battery pack fully again. The correct remaining time will be displayed.
No function works though the power is on.	• Disconnect the mains lead of the AC power adaptor or remove the battery, then reconnect it after about one minute. Turn the power on. If the functions still do not work, press the RESET button below the START/STOP MODE switch using a sharp-pointed object. (If you press the RESET button, all the settings including the date and time return to the default.) (p. 18, 188)
When you shake the camcorder after the POWER switch is set to VTR or OFF, the clacking sound is heard from the camcorder.	• This is due to adopt the linear-mechanism. This is not a malfunction.

English

Self-diagnosis display

Your camcorder has a self-diagnosis display function.
This function displays the current condition of your camcorder as a 5-digit code (a combination of a letter and figures) on the LCD screen or in the viewfinder. If a 5-digit code is displayed, check the following code chart. The last two digits (indicated by □□) will differ depending on the state of your camcorder.

Viewfinder (or LCD screen)



Self-diagnosis display
- C:□□:□□
  You can service your camcorder yourself.
- E:□□:□□
  Contact your Sony dealer.

Five-digit display	Cause and/or Corrective Actions
C:04:□□	• You are using a battery pack that is not an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack. (p. 15)
C:21:□□	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 176)
C:22:□□	• The video heads are dirty. → Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 177)
C:31:□□ C:32:□□	• A malfunction other than the above that you can service has occurred. → Remove the cassette and insert it again, then operate your camcorder. → Disconnect the mains lead of the AC power adaptor or remove the battery pack. After reconnecting the power source, operate your camcorder.
E:61:□□ E:62:□□	• A malfunction that you cannot service has occurred. → Contact your Sony dealer and inform them of the 5-digit code. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer.

English

Warning indicators and messages

If indicators and messages appear on the LCD screen or in the viewfinder, check the following:
See the page in parentheses "( )" for more information.

Warning indicators

The video heads are dirty
Slow flashing:
- You need to clean the heads using the Sony DVM12CL cleaning cassette (not supplied) (p. 177).

The battery is dead or nearly dead
Slow flashing:
- The battery is nearly dead.

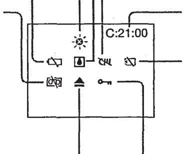
Fast flashing:
- The battery is dead (p. 15).
Depending on conditions, the indicator may flash, even if there are five to 10 minutes remaining.

Warning indicator as to tape
Slow flashing:
- The tape is near the end.
- No tape is inserted (p. 19).*
- The write-protect tab on the cassette is out (red) (p. 19).*

Fast flashing:
- The tape has run out (p. 36).*

You need to eject the cassette
Slow flashing:
- The write-protect tab on the cassette is out (red) (p. 19).*

Fast flashing:
- Moisture condensation has occurred (p. 176).*
- The tape has run out (p. 36).*
- The self-diagnosis display function is activated (p. 163).*



Moisture condensation has occurred*
Fast flashing:
- Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open (p. 176).

Warning indicator as to cassette memory
Slow flashing:
- No tape with cassette memory is inserted (p. 154).*

Self-diagnosis display (p. 163)

Warning indicator as to "Memory Stick"
Slow flashing:
- No "Memory Stick" is inserted (p. 118).

Fast flashing:
- "Memory Stick" is not formatted correctly (p. 102).*

The still image is protected
Slow flashing:
- The still image is protected (p. 146).*

Warning messages

• CLOCK SET	Reset the date and time (p. 113).
• FOR "InfoLITHIUM" BATTERY ONLY	Use an "InfoLITHIUM" battery pack (p. 15).
• MEMORY FULL	The "Memory Stick" is full in photo save function (p. 137).
• CLEANING CASSETTE	The video heads are dirty (p. 177).
• FULL	The tape cassette memory is full (p. 92).*
• 16BIT	AUDIO MODE is set to 16BIT.* You cannot dub new sound (p. 103).
• REC MODE	REC MODE is set to LP.* You cannot dub new sound (p. 103).
• TAPE	There is no recorded portion on the tape.* You cannot dub new sound (p. 88).
• "i.LINK" CABLE	i.LINK cable is connected (p. 87).* You cannot dub new sound.
• FULL	The "Memory Stick" is full (p. 127).*
•	The write-protect tab on the "Memory Stick" is set to LOCK (p. 115).*
• NO FILE	No still image is recorded on the "Memory Stick" (p. 139).*
• NO MEMORY STICK	No "Memory Stick" is inserted (p. 118).
• COPY INHIBIT	The tape contains copyright control signals for copyright protection of software (p. 155).*
• TAPE END	The tape has reached the end of the tape (p. 36).*
• NO TAPE	Insert a cassette tape (p. 19).*

* You hear the melody or beep sound.

Using your camcorder abroad

Using your camcorder abroad

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

Your camcorder is a PAL system based camcorder. If you want to view the playback picture on a TV, it must be a PAL system based TV with the AUDIO/VIDEO input jack.
The following shows TV colour systems used overseas.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

SECAM system
Bulgaria, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the menu settings. See page 98 for more information.

Использование видеокамеры за границей

Использование видеокамеры за границей

Данную видеокамеру можно использовать в любой стране или области, благодаря адаптеру сетевого питания, прилагаемому к видеокамере, который работает в диапазоне от 100 В до 240 В переменного тока с частотой 50/60 Гц.

Данная видеокамера работает в системе PAL. Если необходимо просмотреть воспроизводимое изображение на экране телевизора, то это должен быть телевизор, работающий в системе PAL с входными гнездами AUDIO/VIDEO.
Ниже приведены системы цветного телевидения, используемые за рубежом.

Система PAL
Австралия, Австрия, Бельгия, Китай, Чешская Республика, Дания, Финляндия, Германия, Великобритания, Голландия, Гонконг, Италия, Кувейт, Малайзия, Новая Зеландия, Норвегия, Португалия, Сингапур, Словакская Республика, Испания, Швеция, Швейцария, Таиланд и т.д.

Система PAL-M
Бразилия

Система PAL-N
Аргентина, Парагвай, Уругвай

Система NTSC
Багамские острова, Боливия, Канада, Центральная Америка, Чили, Колумбия, Эквадор, Ямайка, Япония, Корея, Мексика, Перу, Суринам, Тайвань, Филиппины, США, Венесуэла и т.д.

Система SECAM
Болгария, Франция, Гайана, Венгрия, Иран, Ирак, Монако, Польша, Россия, Украина и т.д.

Простая установка разницы во времени на часах

Можно легко установить местное время на часах путем установки разницы во времени. Выберите команду WORLD TIME в установках меню. Подробные сведения приведены на стр. 98.

Maintenance information and precautions

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep sounds and the 🄼 indicator flashes. When the ≜ indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

If moisture condensation occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open. Your camcorder can be used again if the 🄼 indicator does not appear when the power is turned on again.

Note on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:

- You bring your camcorder from a ski slope into a place warmed up by a heating device.
- You bring your camcorder from an air-conditioned car or room into a hot place outside.
- You use your camcorder after a squall or a shower.
- You use your camcorder in a high temperature and humidity place.

How to prevent moisture condensation

When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

Информация по уходу за аппаратом и меры предосторожности

Конденсация влаги

Если видеокамера принесена из холодного места в теплое, внутри камеры, на поверхности ленты или на объективе может произойти конденсация влаги. В этом случае лента может прилипнуть к барабану головки и повредиться, или видеокамера может работать неправильно. Если внутри видеокамеры произошла конденсация влаги, прозвучит звуковой сигнал и замигает индикатор 🄼. Если одновременно мигает индикатор ≜, это значит, что кассета вставлена в видеокамеру. Если влага сконденсировалась на объективе, индикатор не появится.

Если произошла конденсация влаги

Не будут работать никакие функции, кроме извлечения кассеты. Извлеките кассету, отключите видеокамеру и оставьте ее примерно на один час с открытым отсеком для кассеты. Видеокамеру снова можно использовать, если индикатор 🄼 не появляется при повторном включении питания

Конденсации влаги

Конденсация влаги может происходить при перемещении видеокамеры из холодного места в теплое (или наоборот) или при использовании видеокамеры в жарком месте в следующих случаях:

- Если видеокамера принесена со снежного склона в помещение, где работает обогреватель
- Если видеокамера принесена из автомобиля или помещения, в которых работает кондиционер, в жаркое место.
- Если видеокамера используется после грозы или дождя
- Если видеокамера используется в жарком месте или месте с повышенной влажностью.

Как предотвратить конденсацию влаги

Если видеокамера принесена из холодного в теплое место, поместите видеокамеру в пластиковый пакет и плотно его закройте. Снимите пакет, когда температура воздуха внутри пластикового пакета станет равной температуре окружающей среды (приблизительно через час).

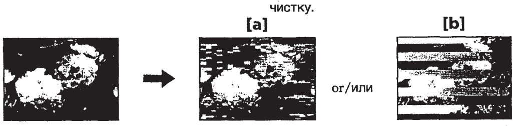
Maintenance information

Cleaning the video head

To ensure normal recording and clear pictures, clean the video heads. The video head may be dirty when:

- mosaic-pattern noise appears on the playback picture.
- playback pictures do not move.
- playback pictures do not appear.
- the ⊗ indicator and "📼 CLEANING CASSETTE" message appear one after another or the ⊗ indicator flashes on the LCD screen or in the viewfinder.

If the above problem, **[a]** or **[b]** occurs, clean the video heads for 10 seconds with the Sony DVM12CL cleaning cassette (not supplied). Check the picture and if the above problem persists, repeat cleaning.



Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using a LCD Cleaning Cloth (not supplied) to clean the LCD screen.

Charging the vanadium-lithium battery in your camcorder

Your camcorder is supplied with a vanadium-lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The vanadium-lithium battery is always charged as long as you are using your camcorder. The battery, however, will get discharged gradually if you do not use your camcorder. It will be completely discharged in about six months if you do not use your camcorder at all. Even if the vanadium-lithium battery is not charged, it will not affect the camcorder operation. To retain the date and time, etc., charge the battery if the battery is discharged.

Информация по уходу за аппаратом

Чистка видеоголовок

Для обеспечения нормальной записи и четкого изображения следует периодически чистить видеоголовки. Видеоголовки возможно загрязнены, если:

- на воспроизводимом изображении появляются помехи в виде мозаики.
- воспроизводимое изображение не двигается.
- изображение не отображается.
- на экране ЖКД или в видоискателе появляются последовательно индикатор ⊗, сообщение "📼 CLEANING CASSETTE" или мигает индикатор ⊗.

При возникновении неисправностей **[a]** или **[b]** очистите видеоголовки с помощью чистящей кассеты Sony DVM12CL (не входит в комплект) в течение 10 секунд. Проверьте качество изображения и, если проблему устранить не удалось, повторите чистку.

Чистка экрана ЖКД

Если на экране ЖКД появятся отпечатки пальцев или пыль, для очистки экрана ЖКД рекомендуется использовать специальную ткань (не входит в комплект).

Зарядка ванадиево-литиевой батареи в видеокамере

Видеокамера поставляется с установленной ванадиево-литиевой батарейкой для сохранения даты времени и т.п., независимо от положения переключателя POWER. Ванадиево-литиевая батарейка всегда заряжается во время использования видеокамеры Однако, если видеокамера не используется, батарейка будет постепенно разряжаться. Если видеокамера совсем не используется, батарейка полностью разрядится примерно через шесть месяцев. Даже если ванадиево-литиевая батарея не заряжена, это никак не повлияет на работу видеокамеры. Если батарея разряжена, то для сохранения даты, времени и т.д. ее необходимо зарядить.

Charging the vanadium-lithium battery:

- Connect your camcorder to mains using the AC power adaptor supplied with your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.
- Or install the fully charged battery pack in your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.

Precautions

Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this operating instructions.
- If any solid object or liquid get inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration.
- Do not touch the LCD screen with a sharp-pointed object.
- If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

On handling tapes

- Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.
- Do not open the tape protect cover or touch the tape.
- Avoid touching or damaging the terminals. To remove dust, clean the terminals with a soft cloth.

Зарядка ванадиево-литиевой батареи:

- Подсоедините видеокамеру к сети электропитания с помощью сетевого адаптера переменного тока, прилагаемого к видеокамере, отключите выключатель POWER видеокамеры и оставьте ее более чем на 24 часа.
- Можно также установить в видеокамеру полностью заряженный батарейный блок и, переведя переключатель POWER в положение OFF, оставить видеокамеру более чем на 24 часа.

Меры предосторожности

Эксплуатация видеокамеры

- Видеокамера должна работать от 7,2 В (батарейный блок) или 8,4 В (сетевой адаптер переменного тока).
- Для работы видеокамеры от постоянного или переменного тока используйте принадлежности, рекомендуемые в настоящей инструкции по эксплуатации.
- Если внутрь корпуса попал какой-либо твердый предмет или жидкость, выключите видеокамеру и перед дальнейшей эксплуатацией проверьте ее у дилера Sony.
- Избегайте грубого обращения с видеокамерой и механических ударов. Особенно аккуратно обращайтесь с объективом.
- Когда видеокамера не используется, переводите переключатель POWER в положение OFF.
- Не заворачивайте видеокамеру в полотенце и не эксплуатируйте ее в таком состоянии. В этом случае может произойти повышение температуры внутри видеокамеры.
- Не храните видеокамеру вблизи сильных магнитных полей или в местах, подверженных механической вибрации.
- Не прикасайтесь к экрану ЖКД острыми предметами.
- Если видеокамера используется на холоде, на экране ЖКД может появляться остаточное изображение. Однако это не является неисправностью.
- При эксплуатации видеокамеры, задняя сторона экрана ЖКД может нагреваться. Однако это не является неисправностью.

Обращение с кассетами

- Не вставляйте какие-либо предметы в маленькие отверстия с задней стороны кассеты. Эти отверстия используются для определения типа и толщины ленты, а также для определения наличия лепестка защиты от записи.
- Не открывайте защитную крышку ленты и не прикасайтесь к ленте.
- Не прикасайтесь и не повреждайте контакты. Для удаления пыли протирайте контакты мягкой тканью.

Camcorder care

- Remove the tape, and periodically turn on the power, operate the CAMERA and VTR sections and play back a tape for about three minutes when your camcorder is not to be used for a long time.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

AC power adaptor

- Unplug the unit from mains when you are not using the unit for a long time. To disconnect the mains lead, pull it out by the plug Never pull the mains lead itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the mains lead forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

Уход за видеокамерой

- Когда видеокамера не используется в течение длительного промежутка времени, вынимайте кассету и периодически включайте питание, дайте камере поработать в режиме CAMERA и VTR, а также включайте воспроизведение кассеты примерно на три минуты.
- Для удаления пыли с объектива используйте мягкую кисточку. Если на объективе имеются отпечатки пальцев, удалите их с помощью мягкой ткани.
- Чистите корпус видеокамеры с помощью сухой мягкой ткани или мягкой ткани, слегка смоченной в слабом растворе моющего средства. Не пользуйтесь растворителями, которые могут повредить отделку.
- Не допускайте попадания песка в видеокамеру. При использовании видеокамеры на песчаном пляже или в пыльном месте, предохраняйте ее от песка и пыли. Песок и пыль могут привести к неисправности видеокамеры, которые иногда невозможно устранить.

Сетевой адаптер переменного тока

- Когда видеокамера длительное время не используется, отключайте аппарат от сети электропитания. Для отключения от сети электропитания, потяните сетевой шнур за вилку. Никогда не тяните за сам шнур.
- Не эксплуатируйте аппарат, когда поврежден шнур питания, или если аппарат упал или был поврежден.
- Сильно не сгибайте шнур питания и не ставьте на него тяжелые предметы. Это вызовет повреждение провода и может привести к пожару или поражению электрическим током.
- Не допускайте контакта металлических предметов с металлическими частями соединений. В этом случае может произойти короткое замыкание, и аппарат может выйти из строя.
- Всегда держите в чистоте металлические контакты.
- Не разбирайте аппарат.
- Не подвергайте аппарат механическим воздействиям и не роняйте его.
- При использовании аппарата, особенно во время зарядки, держите его подальше от АМ-радиоприемников и видеоаппаратуры. АМ-радиоприемники и видеоаппаратура нарушают прием АМ-сигнала и работу видеоаппаратуры.
- В процессе эксплуатации аппарат нагревается. Однако это не является неисправностью.
- Не размещайте аппарат в местах:
  - Чрезмерно жарких или холодных
  - Пыльных или грязных
  - С повышенной влажностью
  - Подверженных вибрации

Maintenance information and precautions

Battery pack

- Use only the specified charger or video equipment with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to video equipment securely.
- Charging while some capacity remains does not affect the original battery capacity.
- The battery pack is not resistant to water. Do not wet the battery pack.
- Unless you use the battery pack for a long period, store the battery pack after you charge it fully and use it completely once a year.
- Store the battery pack in a cool, dry place.

Notes on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following:

- Be sure to insert the batteries with the + – polarities matched to the + – marks.
- Dry batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- Current flows from batteries when you are not using them for a long time.
- Do not use leaking batteries.

If batteries are leaking

- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

Информация по уходу за аппаратом и меры предосторожности

Батарейный блок

- Используйте только указанное зарядное устройство или видеоаппаратуру с функцией зарядки.
- Для предотвращения несчастных случаев, вызванных коротким замыканием, не допускайте контактов металлических предметов с контактами батарей.
- Не держите батарейный блок вблизи огня.
- Не подвергайте батарейный блок воздействию температур свыше 60°C (140°F), не оставляйте его, например, в автомобиле, припаркованном в солнечном месте или под прямым солнечным светом.
- Всегда удаляйте влагу с батарейного блока.
- Не подвергайте батарейный блок воздействию механических ударов.
- Не разбирайте и не изменяйте батарейный блок.
- Надежно прикрепляйте батарейный блок к видеоаппаратуре.
- Зарядка не полностью разряженных батарей не влияет на первоначальную их емкость.
- Батарейный блок не является водонепроницаемым. Не подвергайте батарейный блок воздействию влаги.
- Если Вы длительное время не используете батарейный блок, полностью зарядите и храните его отдельно. Батарейный блок необходимо полностью использовать раз в год.
- Храните батарейный блок в сухом прохладном месте.

Сухие батарейки

Во избежание возможных повреждений, вызываемых утечкой батареек или коррозией, обратите внимание на следующее:

- При установке батареек соблюдайте полярность
- Сухие батарейки нельзя повторно заряжать.
- Не используйте новые батарейки вместе со старыми.
- Не используйте батарейки разного типа.
- Если батарейки длительное время не используются, они постепенно разряжаются.
- Не используйте батарейки, которые потекли.

Если произошла утечка внутреннего вещества батареек

- Перед тем, как установить новые батарейки, тщательно протрите отсек для батареек.
- В случае попадания жидкости на кожу, смойте ее водой.
- При попадании жидкости в глаза, промойте глаза обильным количеством воды и затем обратитесь к врачу

В случае возникновения каких-либо неисправностей, отключите видеокамеру и обратитесь в ближайший сервисный центр Sony

— Quick Reference —

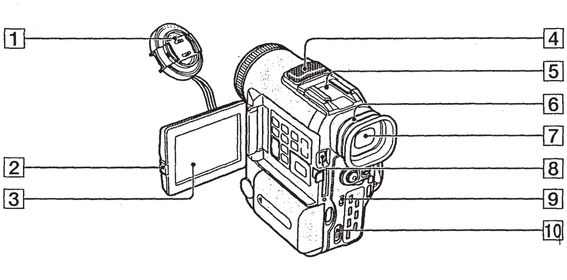
Identifying the parts and controls

Camcorder

– Оперативный справочник –

Обозначение деталей и органов управления

Видеокамера



1. **Lens cap** (p. 20)
2. **OPEN button** (p. 22, 33)
3. **LCD screen** (p. 22)
4. **Microphone** (p. 85)
5. **Intelligent accessory shoe** (p. 84)
6. **Eyecup**
7. **Viewfinder** (p. 24)
8. **MEMORY RELEASE button** (p. 118)
9. **FADER button** (p. 48)
10. **OPEN/⏏EJECT lever** (p. 19)

1. **Крышка объектива** (стр. 20)
2. **Кнопка OPEN** (стр. 22, 33)
3. **Экран ЖКД** (стр. 22)
4. **Микрофон** (стр. 85)
5. **Держатель для вспомогательных принадлежностей** (стр. 84)
6. **Окуляр**
7. **Видоискатель** (стр 24)
8. **Кнопка MEMORY RELEASE** (стр. 118)
9. **Кнопка FADER** (стр 48)
10. **Рычаг OPEN/⏏EJECT** (стр. 19)

Identifying the parts and controls

This mark indicates that this product is a genuine accessory for Sony video products. When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

These are trademarks.

Notes on the intelligent accessory shoe

- The intelligent accessory shoe supplies power to optional accessories such as a video light or microphone.
- The intelligent accessory shoe is linked to the POWER switch, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.

Обозначение деталей и органов управления

Данный знак означает, что это изделие является подлинной принадлежностью для видеоаппаратуры Sony. При покупке видеоаппаратуры Sony рекомендуется приобретать для нее принадлежности со знаком "GENUINE VIDEO ACCESSORIES".

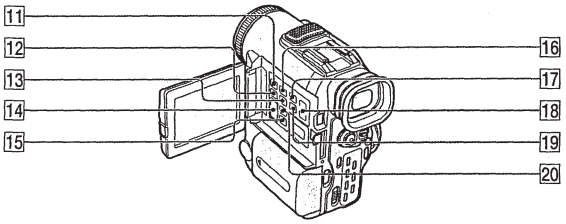
Торговые знаки.

Держатель для вспомогательных принадлежностей

- Держатель для вспомогательных принадлежностей подает питание на дополнительные принадлежности, такие как видеолампу и микрофон.
- Держатель для вспомогательных принадлежностей связан с переключателем POWER, позволяющим включать и отключать питание, подаваемое с держателя. Подробные сведения см. в инструкции по эксплуатации.
- Держатель для вспомогательных принадлежностей имеет защитное устройство для надежного крепления устанавливаемых принадлежностей. Для подсоединения принадлежности нажмите ее вниз и задвиньте до упора, а затем затяните винт.
- Для снятия принадлежности ослабьте винт, затем нажмите вниз и снимите принадлежность, потянув на себя.

Identifying the parts and controls

Обозначение деталей и органов управления

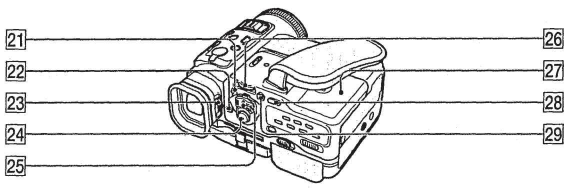


11. **MEMORY PLAY button** (p. 130)
12. **END SEARCH button** (p. 32)
13. **DIGITAL EFFECT button** (p. 53)
14. **VOLUME buttons** (p. 33)
15. **TITLE button** (p. 90)
16. **MEMORY INDEX button** (p. 140)
17. **MEMORY DELETE button** (p. 148)
18. **MEMORY +/– buttons** (p. 130, 138)
19. **DISPLAY button** (p. 34)
20. **MENU button** (p. 98)

11. **Кнопка MEMORY PLAY** (стр. 130)
12. **Кнопка END SEARCH** (стр. 32)
13. **Кнопка DIGITAL EFFECT** (стр. 53)
14. **Кнопки VOLUME** (стр 33)
15. **Кнопка TITLE** (стр 90)
16. **Кнопка MEMORY INDEX** (стр. 140)
17. **Кнопка MEMORY DELETE** (стр. 148)
18. **Кнопки MEMORY +/-** (стр. 130, 138)
19. **Кнопка DISPLAY** (стр. 34)
20. **Кнопка MENU** (стр. 98)

Identifying the parts and controls

Обозначение деталей и органов управления



21 **LOCK switch** (p. 21)

22 **⏲ (self-timer) button** (p. 31, 43, 128)

23 **Viewfinder lens adjustment lever** (p. 24)

24 **START/STOP button** (p. 20)

25 **POWER switch** (p. 20)

26 **SEL/PUSH EXEC dial** (p. 98)

27 **Cassette lid** (p. 19)

28 **BACK LIGHT button** (p. 28)

29 **EXPOSURE button** (p. 58)

21 **Переключатель LOCK** (стр. 21)

22 **Кнопка ⏲ (self-timer)** (стр. 31, 43, 128)

23 **Рычажок регулировки объектива видоискателя** (стр. 24)

24 **Кнопка START/STOP** (стр. 20)

25 **Переключатель POWER** (стр. 20)

26 **Диск SEL/PUSH EXEC** (стр. 98)

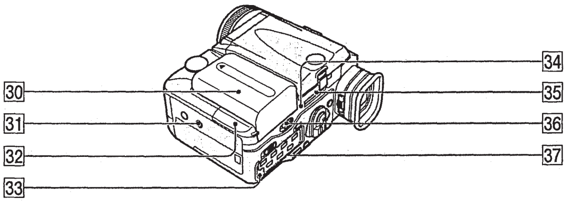
27 **Крышка кассетного отсека** (стр. 19)

28 **Кнопка BACK LIGHT** (стр 28)

29 **Кнопка EXPOSURE** (стр 58)

Identifying the parts and controls

Обозначение деталей и органов управления



30 **Battery pack/Battery terminal cover** (p. 14)

31 **Tripod receptacle**
Make sure that the length of the tripod screw is less than 6.5 mm (9/32 inch). Otherwise, you cannot attach the tripod securely and the screw may damage your camcorder.

32 **DC IN jack cover** (p. 15)

33 **CHARGE lamp** (p. 15)

34 **Access lamp** (p. 118)

35 **"Memory Stick" slot** (p. 118)

36 **BATT (battery) RELEASE lever** (p. 14)

37 **Video control buttons** (p. 33, 36, 75)
■ STOP (stop)
◀◀ REW (rewind)
▶ PLAY (playback)
▶▶ FF (fast-forward)
❚❚ PAUSE (pause)
● REC (recording)
The control buttons light up when you set the POWER switch to VTR.

30 **Батарейный блок/крышка батарейного отсека** (стр. 14)

31 **Гнездо для штатива**
Убедитесь, что длина винта штатива меньше 6,5 мм. В противном случае, будет невозможно надежно прикрепить штатив, и винт может повредить видеокамеру.

32 **Крышка гнезда DC IN** (стр. 15)

33 **Лампочка CHARGE** (стр. 15)

34 **Лампочка Access** (стр. 118)

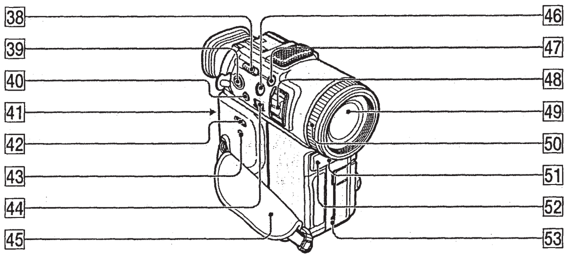
35 **Разъем "Memory Stick"** (стр. 118)

36 **Рычажок BATT RELEASE** (стр. 14)

37 **Кнопки управления видеоизображением** (стр. 33, 36, 75)
■ STOP (стоп)
◀◀ REW (перемотка назад)
▶ PLAY (воспроизведение)
▶▶ FF (ускоренная перемотка вперед)
❚❚ PAUSE (пауза)
● REC (запись)
Кнопки управления подсвечиваются при установке переключателя POWER в положение VTR.

Identifying the parts and controls

Обозначение деталей и органов управления



38 **NIGHTSHOT switch** (p. 29)

39 **MIC jack (PLUG IN POWER)** (p. 84)
Connect an external microphone (not supplied). This jack also accepts a "plug-in-power" microphone.

40 **LASER LINK button** (p. 39)

41 **Cassette compartment** (p. 19)

42 **START/STOP MODE switch** (p. 26)

43 **RESET button** (p. 162)

44 **FOCUS button** (p. 59)

45 **Grip strap**

46 **PHOTO button** (p. 41, 124)

47 **+SLOW SHTR button** (p. 29)

48 **Power zoom lever** (p. 25)

49 **Lens**

50 **Focus ring** (p. 59)

51 **Infrared rays emitter** (p. 29, 39)

52 **Remote sensor**

53 **Camera recording lamp** (p. 20)

38 **Переключатель NIGHTSHOT** (стр. 29)

39 **Гнездо MIC (PLUG IN POWER)** (стр. 84)
Для подсоединения внешнего микрофона (не входит в комплект). В это гнездо также можно подключить микрофон "с выключателем питания".

40 **Кнопка LASER LINK** (стр. 39)

41 **Отсек для кассеты** (стр. 19)

42 **Переключатель START/STOP MODE** (стр. 26)

43 **Кнопка RESET** (стр. 171)

44 **Кнопка FOCUS** (стр. 59)

45 **Ремень для захвата**

46 **Кнопка PHOTO** (стр. 41, 124)

47 **Кнопка +SLOW SHTR** (стр. 29)

48 **Рычажок приводного вариообъектива** (стр. 25)

49 **Объектив**

50 **Кольцо фокусировки** (стр. 59)

51 **Излучатель инфракрасных лучей** (стр. 29, 39)

52 **Датчик дистанционного управления**

53 **Лампа записи видеокамеры** (стр 20)

Identifying the parts and controls

Обозначение деталей и органов управления

Note on the Carl Zeiss lens
Your camcorder is equipped with a Carl Zeiss lens which can reproduce a fine image.
The lens for your camcorder was developed jointly by Carl Zeiss, in Germany, and Sony Corporation. It adopts the MTF* measurement system for video camera and offers a quality as the Carl Zeiss lens.

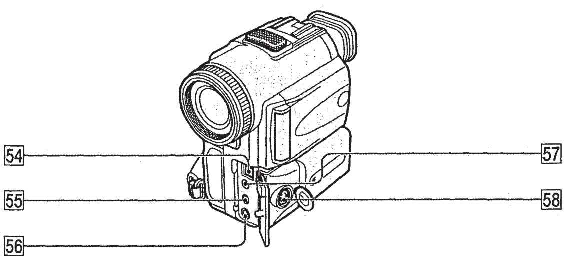
* MTF is an abbreviation of Modulation Transfer Function/Factor.
The value number indicates the amount of light of a subject penetrating into the lens.

What is LASER LINK?
The LASER LINK system sends and receives pictures and sound between video equipment having the mark by using infrared rays.

Объектив Carl Zeiss
Ваша видеокамера оснащена объективом Carl Zeiss, который позволяет получать высококачественное изображение.
Объектив для видеокамеры был разработан совместно компанией Carl Zeiss, Германия и корпорацией Sony. Он основан на системе измерения MTF* для видеокамеры и обеспечивает качество, присущее объективам Carl Zeiss.

* MTF является сокращением от Modulation Transfer Function/Factor (функция/коэффициент передачи модуляции).
Численная величина указывает количество света от объекта, попадающего в объектив.

Что такое LASER LINK?
Система LASER LINK посылает и принимает сигналы изображения и звука между видеоаппаратурой, имеющей знак , с помощью инфракрасных лучей.



54 **i DV IN/OUT jack** (p. 72, 79, 135)
This "i.LINK" mark is a trademark of Sony Corporation and indicates that this product is in agreement with IEEE 1394-1995 specifications and their revisions.

The i DV IN/OUT jack is i.LINK compatible.

55 **∩ (headphone) jack**

56 **AUDIO/VIDEO jack**
(p. 38, 44, 70, 77, 85, 134)

57 **LANC jack**

58 **S VIDEO jack** (p. 38, 44, 71, 78)

54 **i Гнездо DV IN/OUT** (стр. 72, 79, 135)
Знак "i.LINK" является торговой маркой корпорации Sony и указывает на то, что данное изделие соответствует техническим условиям IEEE 1394-1995 и их дополнениям.

Гнездо i DV IN/OUT совместимо с каналом передачи сигналов i LINK.

55 **Гнездо ∩ (головные телефоны)**

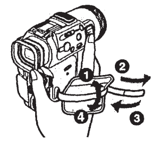
56 **Гнездо AUDIO/VIDEO**
(стр. 38, 44, 70, 77, 85, 134)

57 **Гнездо дистанционного управления LANC**

58 **Гнездо S VIDEO** (стр 38, 44, 71, 78)

Fastening the grip strap

Прикрепление ремня для захвата



Fasten the grip strap firmly.

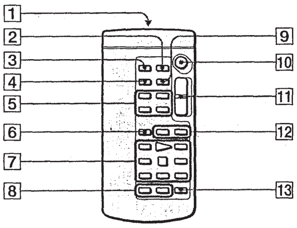
Плотно пристегните ремень для захвата видеокамеры.

Remote Commander

The buttons that have the same name on the Remote Commander as on your camcorder function identically to the buttons on your camcorder.

Пульт дистанционного управления

Кнопки на пульте дистанционного управления, имеющие те же названия, что и кнопки на видеокамере, работают аналогичным образом.



1 **Transmitter**
Point toward the remote sensor to control your camcorder after turning on your camcorder.

2 **ZERO SET MEMORY button** (p. 63)

3 **PHOTO button** (p. 41, 124)

4 **DISPLAY button** (p. 34)

5 **Memory control buttons**
(p. 130, 138)

6 **SEARCH MODE button** (p. 64, 65, 67)

7 **Video control buttons** (p. 36)

8 **REC button** (p. 77)/**MARK button**
(p. 74)

9 **DATA CODE button** (p. 35)

10 **START/STOP button** (p. 20)

11 **Power zoom button** (p. 25)

12 **I◀◀ / ▶▶I buttons** (p. 64, 65, 67)

13 **AUDIO DUB button** (p. 86)

1 **Передатчик**
Направьте пульт на датчик для управления видеокамерой после ее включения.

2 **Кнопка ZERO SET MEMORY**
(стр. 63)

3 **Кнопка PHOTO** (стр. 41, 124)

4 **Кнопка DISPLAY** (стр. 34)

5 **Кнопки управления памятью**
(стр. 130, 138)

6 **Кнопка SEARCH MODE** (стр. 64, 65, 67)

7 **Кнопки управления видеоизображением** (стр. 36)

8 **Кнопка REC** (стр. 77)/**кнопка MARK**
(стр. 74)

9 **Кнопка DATA CODE** (стр. 35)

10 **Кнопка START/STOP** (стр. 20)

11 **Кнопка приводного вариообъектива**
(стр 25)

12 **Кнопки I◀◀/▶▶I** (стр 64, 65, 67)

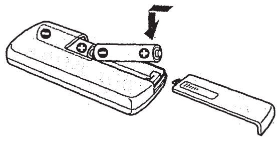
13 **Кнопка AUDIO DUB** (стр. 86)

To prepare the Remote Commander

Insert two R6 (Size AA) batteries by matching the + and – polarities on the batteries to the + – marks inside the battery compartment.

Для подготовки пульта дистанционного управления

Вставьте две батарейки R6 (размера AA), соблюдая полярность + и - со знаками + - внутри отсека для батареек.

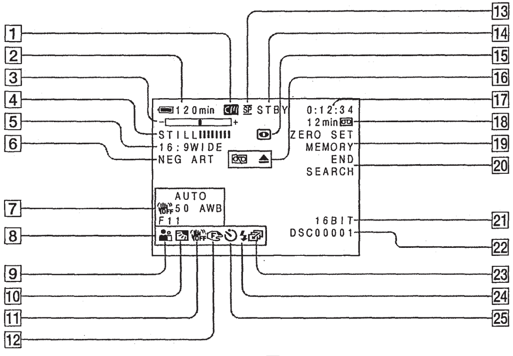


Notes on the Remote Commander
- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR in the commander mode VTR 2, we recommend changing the commander mode or covering the sensor of the VCR with black paper.

Пульт дистанционного управления
- При наведении держите датчик дистанционного управления подальше от сильных источников света таких, как направленные солнечные лучи и внутренне освещение. В противном случае, пульт дистанционного управления может работать неправильно.
- Данная видеокамера работает в режиме пульта дистанционного управления VTR 2. Режимы пульта дистанционного управления 1, 2 и 3 используются для отличия данной видеокамеры от других видеомагнитофонов фирмы Sony во избежание неправильной работы пульта дистанционного управления. Если Вы используете другой видеомагнитофон Sony, работающий в режиме дистанционного управления VTR 2, рекомендуется изменить режим пульта дистанционного управления или закрыть датчик дистанционного управления на видеомагнитофоне черной бумагой.

Operation indicators

Рабочие индикаторы



1 **Cassette memory indicator** (p. 154)

2 **Remaining battery time indicator**
(p. 27)

3 **Zoom indicator** (p. 25)/**Exposure indicator** (p. 58)/**Data file name indicator** (p. 115)

4 **Digital effect indicator** (p. 52)/**FADER indicator** (p. 48)/**MEMORY MIX indicator** (p. 129)

5 **16:9WIDE indicator** (p. 47)

6 **Picture effect indicator** (p. 50)

7 **Data code indicator** (p. 35)

8 **LCD bright indicator** (p. 23)/**Volume indicator** (p. 33)

9 **PROGRAM AE indicator** (p. 55)

10 **Backlight indicator** (p. 28)

11 **SteadyShot OFF indicator** (p. 99)

12 **Manual focus/Infinity indicator** (p. 59)

13 **Recording mode indicator** (p. 103)

14 **Standby/Recording indicator** (p. 20)/**Video control mode indicator** (p. 36)/**Image size indicator** (p. 121)/**Image quality mode indicator** (p. 119)

1 **Индикатор кассетной памяти** (стр. 154)

2 **Индикатор оставшегося времени работы батареи** (стр. 27)

3 **Индикатор вариообъектива** (стр. 25)/**Индикатор экспозиции** (стр. 58)/**Индикатор имени файла данных** (стр. 115)

4 **Индикатор цифрового эффекта** (стр. 52)/**индикатор FADER** (стр. 48)/**Индикатор MEMORY MIX** (стр. 129)

5 **Индикатор режима 16:9WIDE** (стр. 47)

6 **Индикатор эффекта изображения** (стр. 50)

7 **Индикатор кода данных** (стр. 35)

8 **Индикатор яркости ЖКД** (стр. 23)/**индикатор громкости** (стр. 33)

9 **Индикатор PROGRAM AE** (стр. 55)

10 **Индикатор задней подсветки** (стр. 28)

11 **Индикатор SteadyShot OFF** (стр 106)

12 **Индикатор ручной фокусировки/бесконечности** (стр. 59)

13 **Индикатор режима записи** (стр. 110)

14 **Индикатор ожидания/записи** (стр. 20)/**Индикатор режима видеоконтроля** (стр. 36)/**Индикатор размера изображения** (стр. 121)/**Индикатор режима качества изображения** (стр. 119)

Identifying the parts and controls

15 **NIGHTSHOT indicator** (p. 29)

16 **Warning indicators** (p. 164)

17 **Tape counter indicator** (p. 63)/**5SEC mode indicator** (p. 26)/**Time code indicator** (p. 27)/**Self-diagnosis indicator** (p. 163)/**Photo mode indicator** (p. 41)/**Image number indicator** (p. 139)

18 **Remaining tape indicator** (p. 27)/**Memory playback indicator** (p. 139)

19 **ZERO SET MEMORY indicator** (p. 63)

20 **END SEARCH indicator** (p. 32)

21 **Audio mode indicator** (p. 103)

22 **Data file name indicator**
This indicator appears when the MEMORY MIX functions work.

23 **Continuous mode indicator** (p. 127)

24 **Video flash ready indicator**
This indicator appears when you use the video flash light (not supplied).

25 **Self-timer indicator** (p. 31)

Обозначение деталей и органов управления

15 **Индикатор NIGHTSHOT** (стр. 29)

16 **Предупреждающие индикаторы** (стр. 173)

17 **Индикатор счетчика ленты** (стр. 63)/**Индикатор режима 5SEC** (стр. 26)/**Индикатор кода времени** (стр. 27)/**Индикатор самодиагностики** (стр. 172)/**Индикатор фоторежима** (стр. 41)/**Индикатор номера изображения** (стр. 139)

18 **Индикатор оставшейся ленты** (стр 27)/**Индикатор воспроизведения из памяти** (стр. 139)

19 **Индикатор ZERO SET MEMORY** (стр. 63)

20 **Индикатор END SEARCH** (стр. 32)

21 **Индикатор аудиорежима** (стр 110)

22 **Индикатор имени файла данных**
Этот индикатор появляется, когда работает функция MEMORY MIX

23 **Индикатор непрерывного режима** (стр. 127)

24 **Индикатор готовности видеовспышки**
Этот индикатор появляется, когда используется видеовспышка (не входит в комплект).

25 **Индикатор таймера самозапуска** (стр. 31)

English

Quick Function Guide

Functions to adjust exposure (in the recording mode)

• In a dark place	NIGHTSHOT (p. 29)
• In insufficient light	Low lux mode (p. 55)
• In dark environments such as sunset, fireworks, or general night views	Sunset & moon mode (p. 55)
• Shooting backlit subjects	BACK LIGHT (p. 28)
• In spotlight, such as at the theatre or a formal event	Spotlight mode (p. 55)
• In strong light or reflected light, such as at a beach in midsummer or on a ski slope	Beach & ski mode (p. 55)

Functions to give images more impact (in the recording mode)

• Smooth transition between scenes	FADER (p. 48)
• Taking a still picture	PHOTO (p. 41, 124)
• Digital processing of images	PICTURE EFFECT (p. 50)/DIGITAL EFFECT (p. 52)
• Creating a soft background for subjects	Soft portrait mode (p. 55)
• Superimposing a title	TITLE (p. 89)

Functions to give a natural appearance to your recordings (in the recording mode)

• Preventing deterioration of picture quality in digital zoom	D ZOOM [MENU] (p. 98)
• Focusing manually	Manual focus (p. 59)
• Shooting distant subjects	Landscape mode (p. 55)
• Recording fast-moving subjects	Sports lesson mode (p. 55)

Functions to be used in editing (in the recording mode)

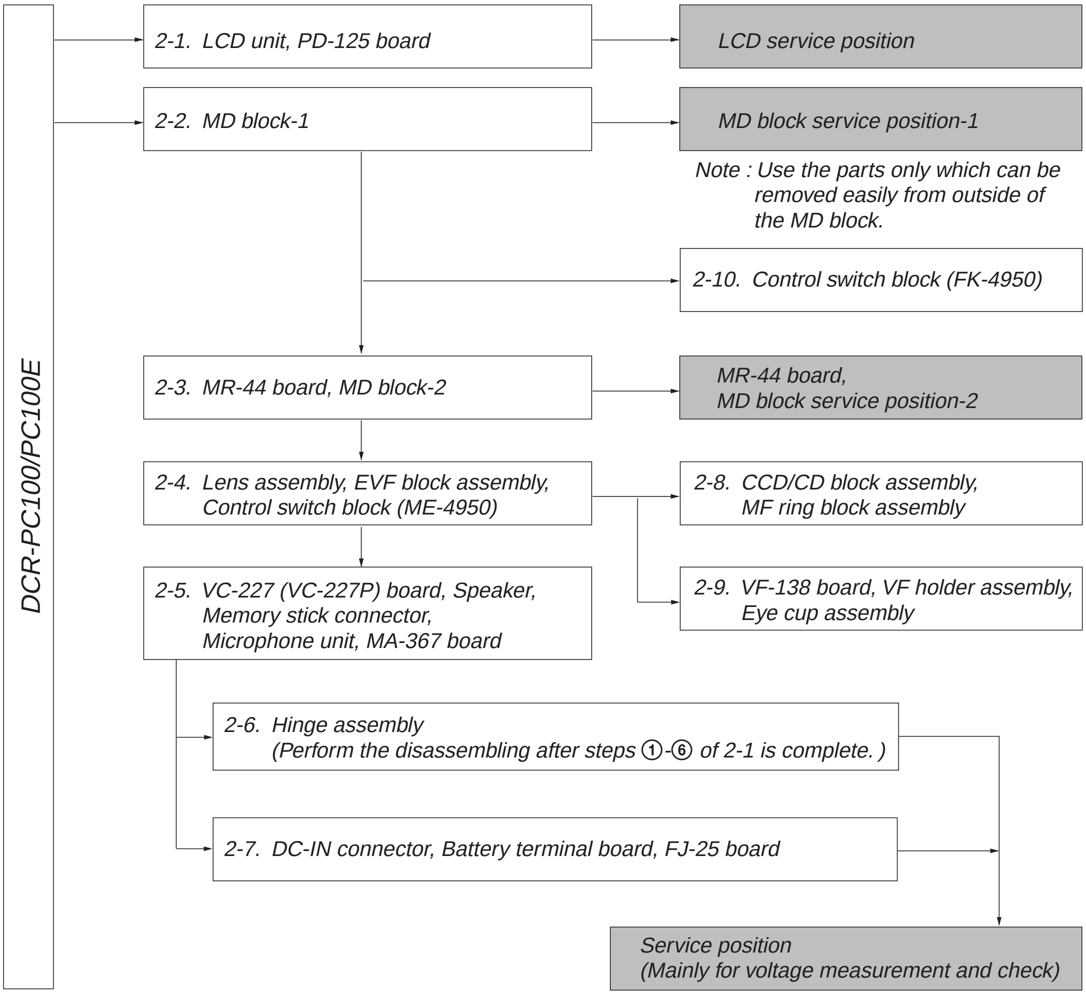
• Watching the picture on a wide-screen TV	Wide mode (p. 47)
• Viewing images using a personal computer	"Memory Stick" (p. 115)

Functions to be used after recording (in the playback mode)

• Digital processing of recorded images	PICTURE EFFECT (p. 61)/DIGITAL EFFECT (p. 62)
• Displaying the date/time or various settings when you recorded	Data code (p. 35)
• Quickly locating a desired scene	Zero set memory (p. 63)
• Searching for scenes having a title	Title search (p. 64)
• Searching for scenes recorded in the photo mode	Photo search (p. 67)
• Scanning scenes recorded in the photo mode	Photo scan (p. 69)
• Playing back monaural sound or sub sound	HiFi SOUND [MENU] (p. 98)
• Playing back the picture on a TV without connecting cord	LASER LINK (p. 39)

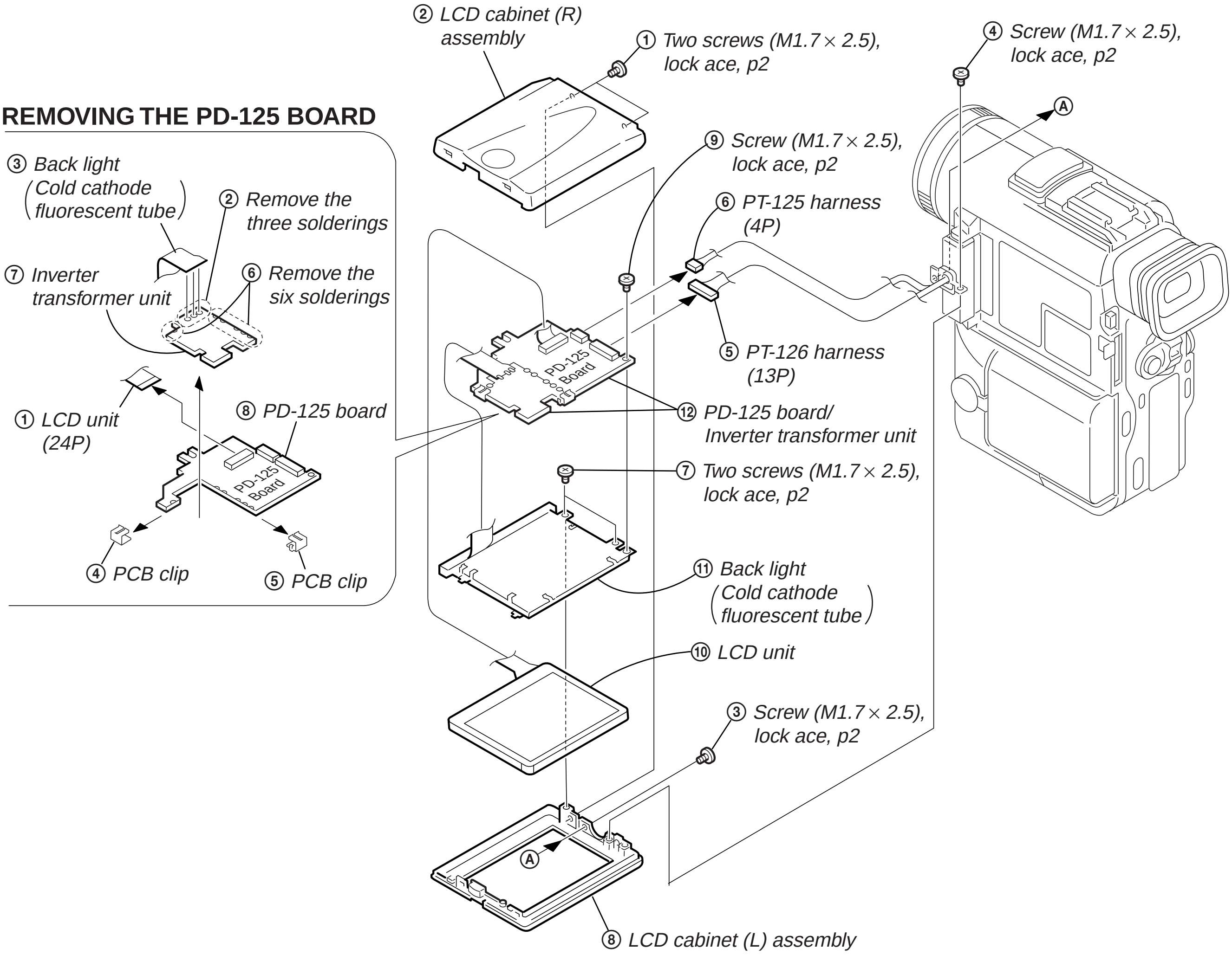
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

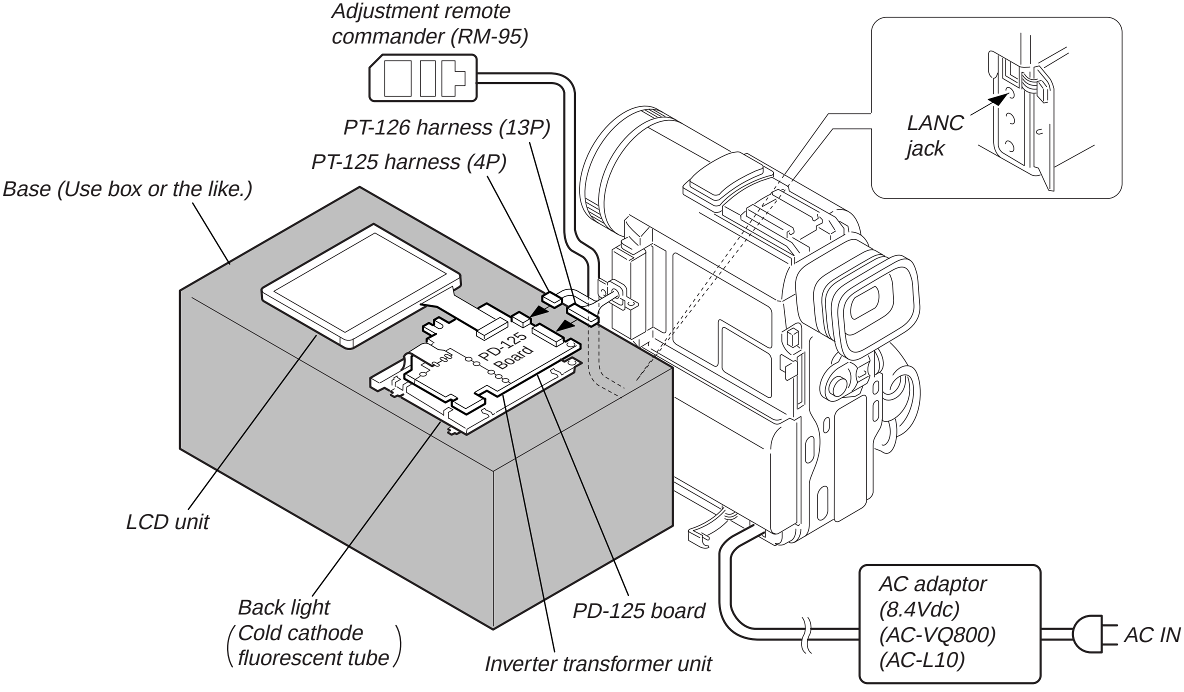

DCR-PC100/PC100E
2-1. LCD unit, PD-125 board
LCD service position
2-2. MD block-1
MD block service position-1
Note : Use the parts only which can be removed easily from outside of the MD block.
2-10. Control switch block (FK-4950)
2-3. MR-44 board, MD block-2
MR-44 board, MD block service position-2
2-4. Lens assembly, EVF block assembly, Control switch block (ME-4950)
2-8. CCD/CD block assembly, MF ring block assembly
2-9. VF-138 board, VF holder assembly, Eye cup assembly
2-5. VC-227 (VC-227P) board, Speaker, Memory stick connector, Microphone unit, MA-367 board
2-6. Hinge assembly (Perform the disassembling after steps ①-⑥ of 2-1 is complete.)
2-7. DC-IN connector, Battery terminal board, FJ-25 board
Service position (Mainly for voltage measurement and check)

NOTE: Follow the disassembly procedure in the numerical order given.

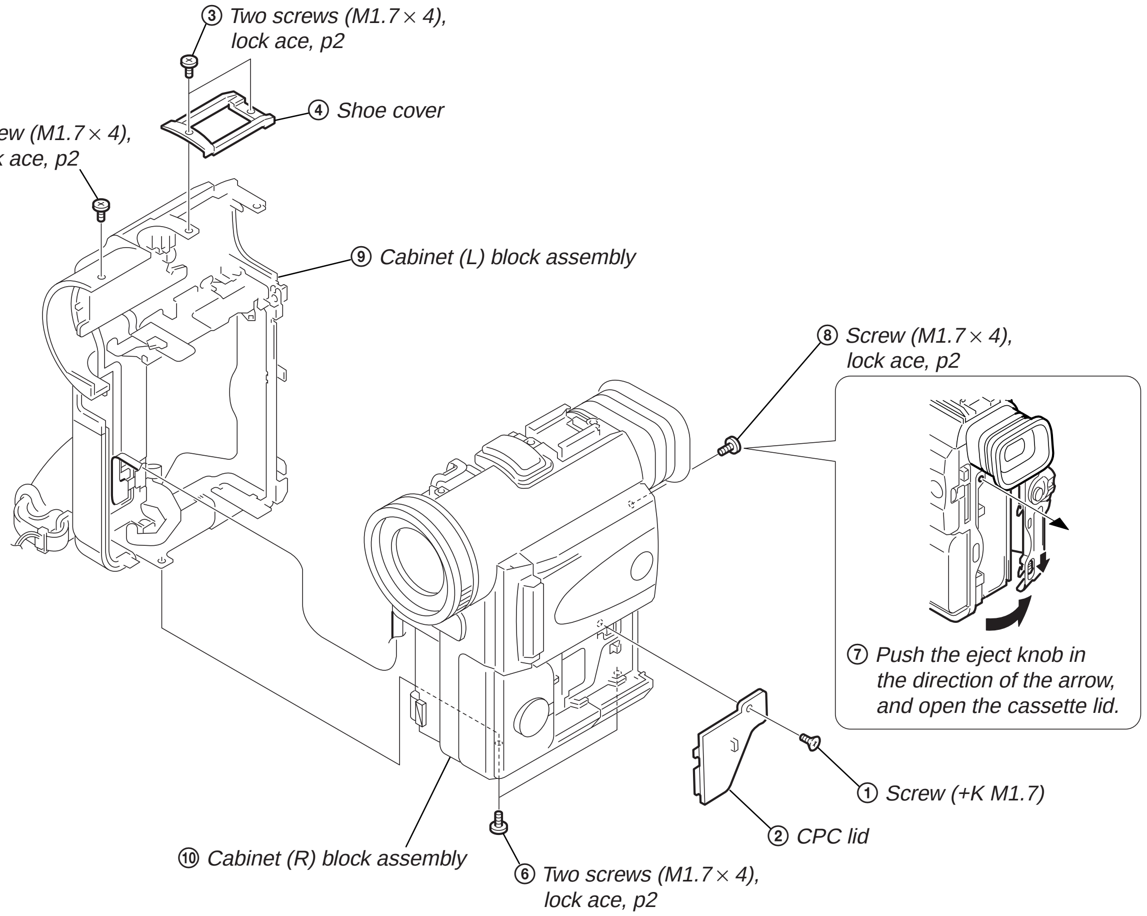
2-1. LCD UNIT, PD-125 BOARD


② LCD cabinet (R) assembly
① Two screws (M1.7 × 2.5), lock ace, p2
④ Screw (M1.7 × 2.5), lock ace, p2
A
REMOVING THE PD-125 BOARD
③ Back light (Cold cathode fluorescent tube)
② Remove the three solderings
⑦ Inverter transformer unit
⑥ Remove the six solderings
① LCD unit (24P)
⑧ PD-125 board
PD-125 Board
④ PCB clip
⑤ PCB clip
⑨ Screw (M1.7 × 2.5), lock ace, p2
⑥ PT-125 harness (4P)
⑤ PT-126 harness (13P)
PD-125 Board
⑫ PD-125 board/ Inverter transformer unit
⑦ Two screws (M1.7 × 2.5), lock ace, p2
⑪ Back light (Cold cathode fluorescent tube)
⑩ LCD unit
③ Screw (M1.7 × 2.5), lock ace, p2
A
⑧ LCD cabinet (L) assembly

[LCD SERVICE POSITION]

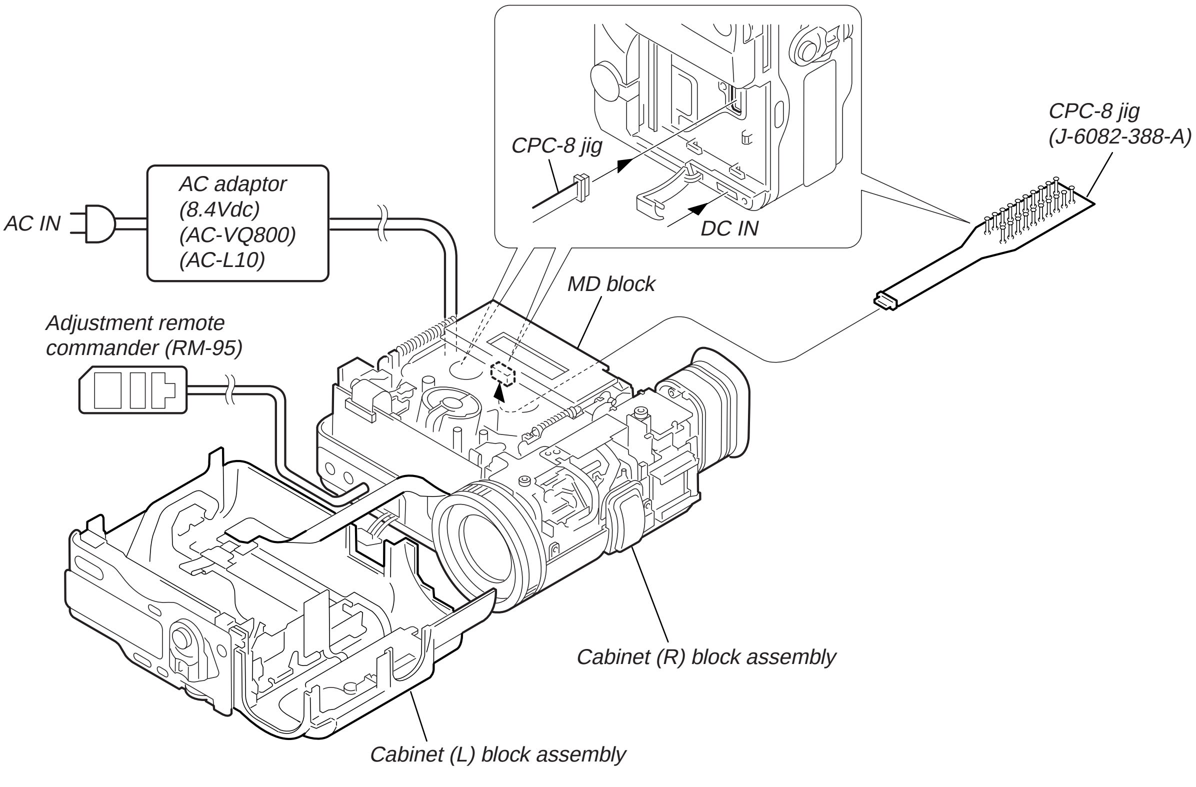

Adjustment remote commander (RM-95)
PT-126 harness (13P)
PT-125 harness (4P)
Base (Use box or the like.)
LANC jack
PD-125 Board
LCD unit
Back light (Cold cathode fluorescent tube)
PD-125 board
Inverter transformer unit
AC adaptor (8.4Vdc) (AC-VQ800) (AC-L10)
AC IN

2-2. MD BLOCK-1

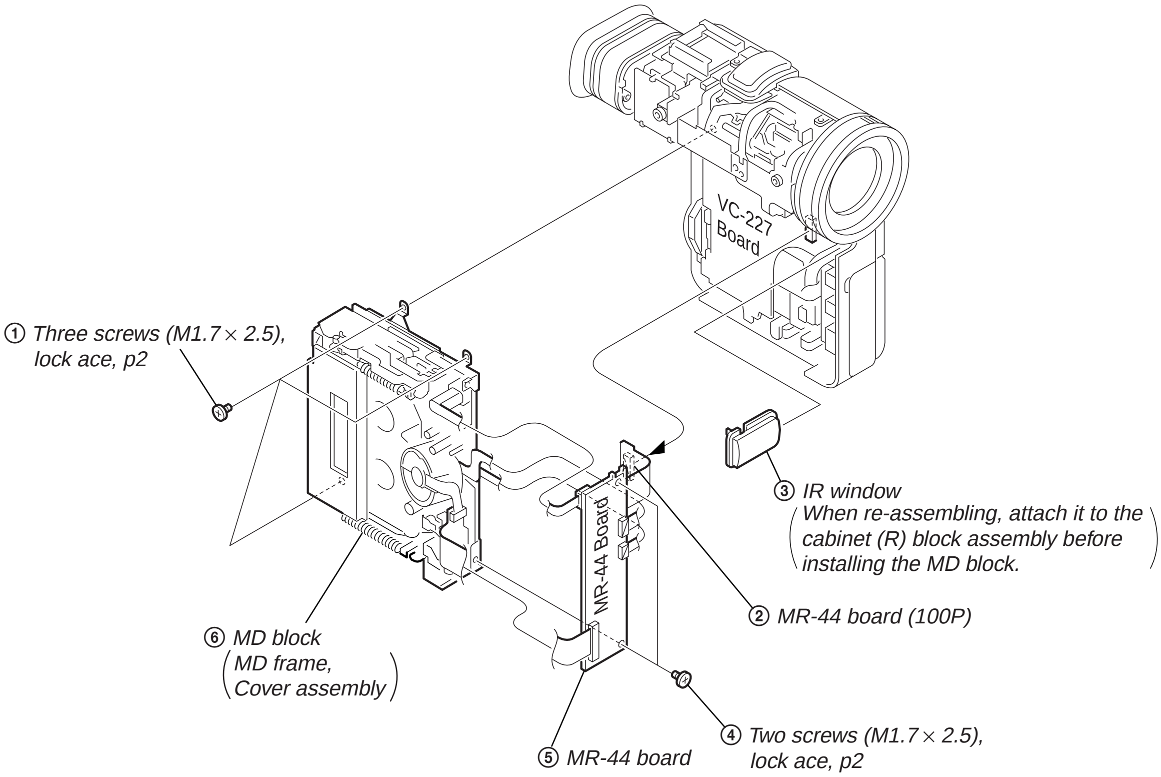

③ Two screws (M1.7 × 4), lock ace, p2
④ Shoe cover
⑤ Screw (M1.7 × 4), lock ace, p2
⑨ Cabinet (L) block assembly
⑧ Screw (M1.7 × 4), lock ace, p2
⑦ Push the eject knob in the direction of the arrow, and open the cassette lid.
① Screw (+K M1.7)
② CPC lid
⑩ Cabinet (R) block assembly
⑥ Two screws (M1.7 × 4), lock ace, p2

[MD BLOCK SERVICE POSITION-1]

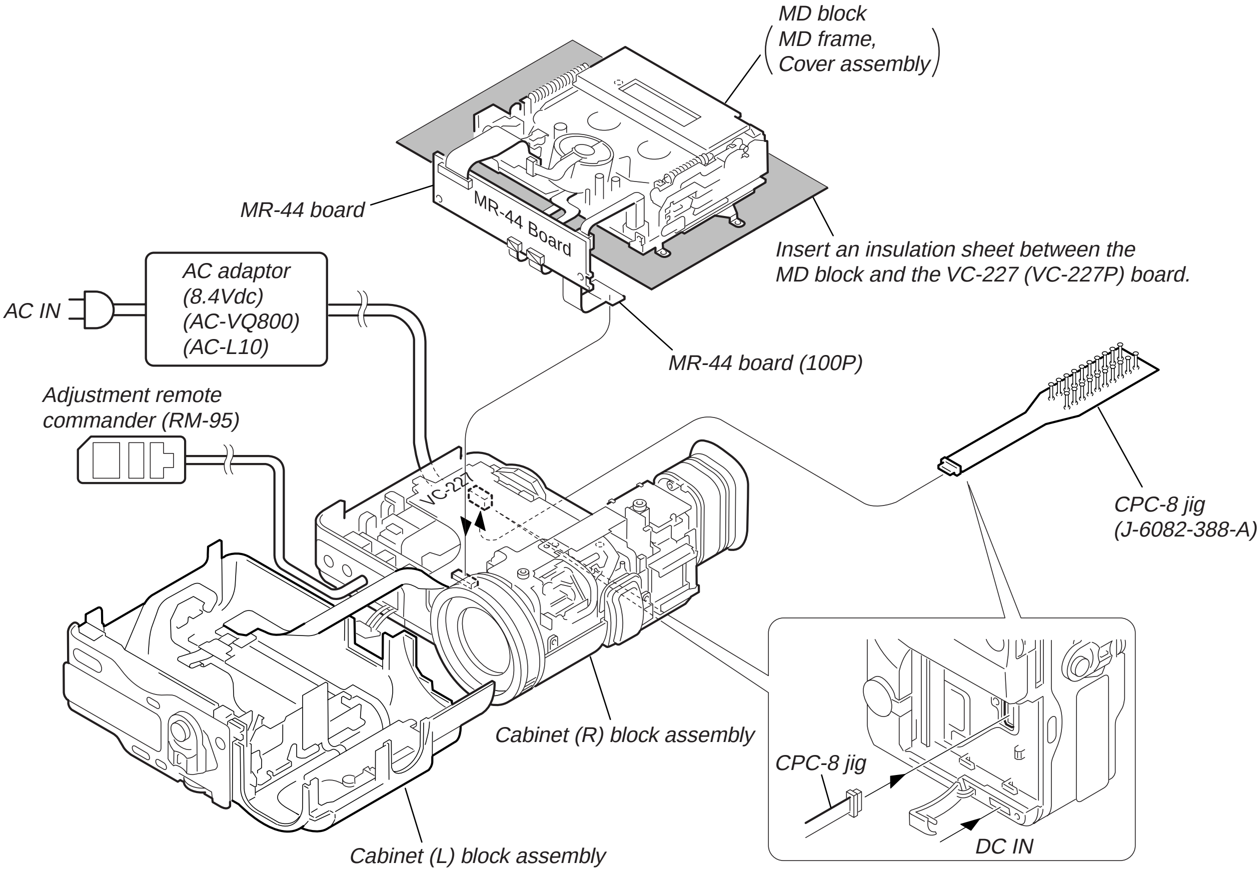
Note: *Use the parts only which can be removed easily from outside of the MD block.*


CPC-8 jig
DC IN
CPC-8 jig (J-6082-388-A)
AC IN
AC adaptor (8.4Vdc) (AC-VQ800) (AC-L10)
MD block
Adjustment remote commander (RM-95)
Cabinet (R) block assembly
Cabinet (L) block assembly

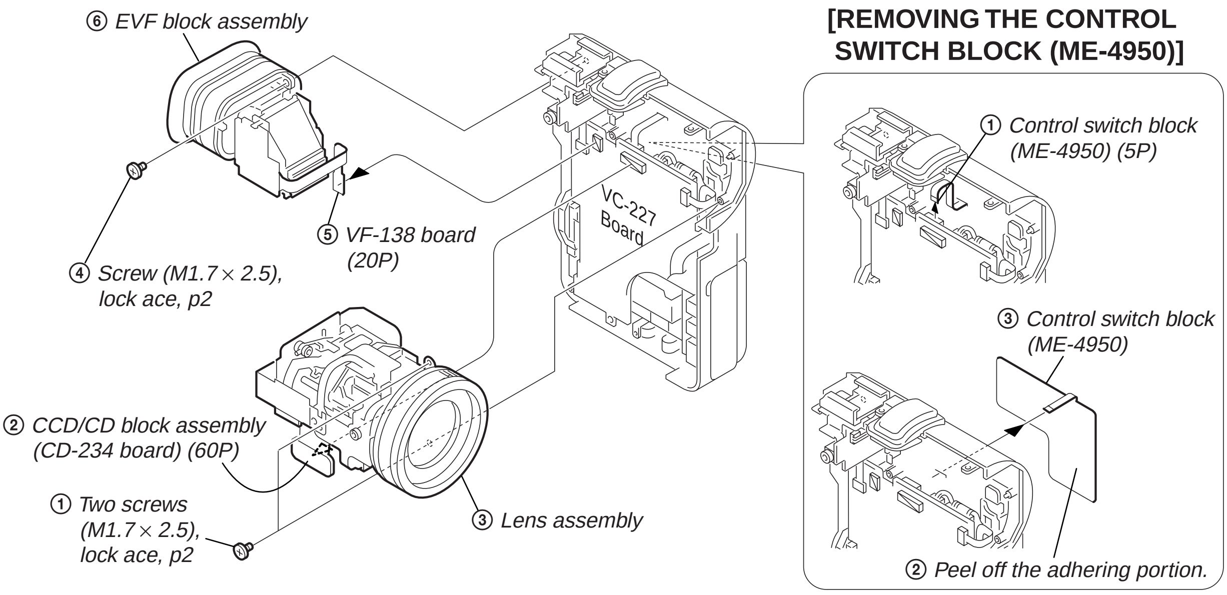
2-3. MR-44 BOARD, MD BLOCK-2


VC-227 Board
① Three screws (M1.7 × 2.5), lock ace, p2
③ IR window
When re-assembling, attach it to the cabinet (R) block assembly before installing the MD block.
MR-44 Board
② MR-44 board (100P)
⑥ MD block (MD frame, Cover assembly)
④ Two screws (M1.7 × 2.5), lock ace, p2
⑤ MR-44 board

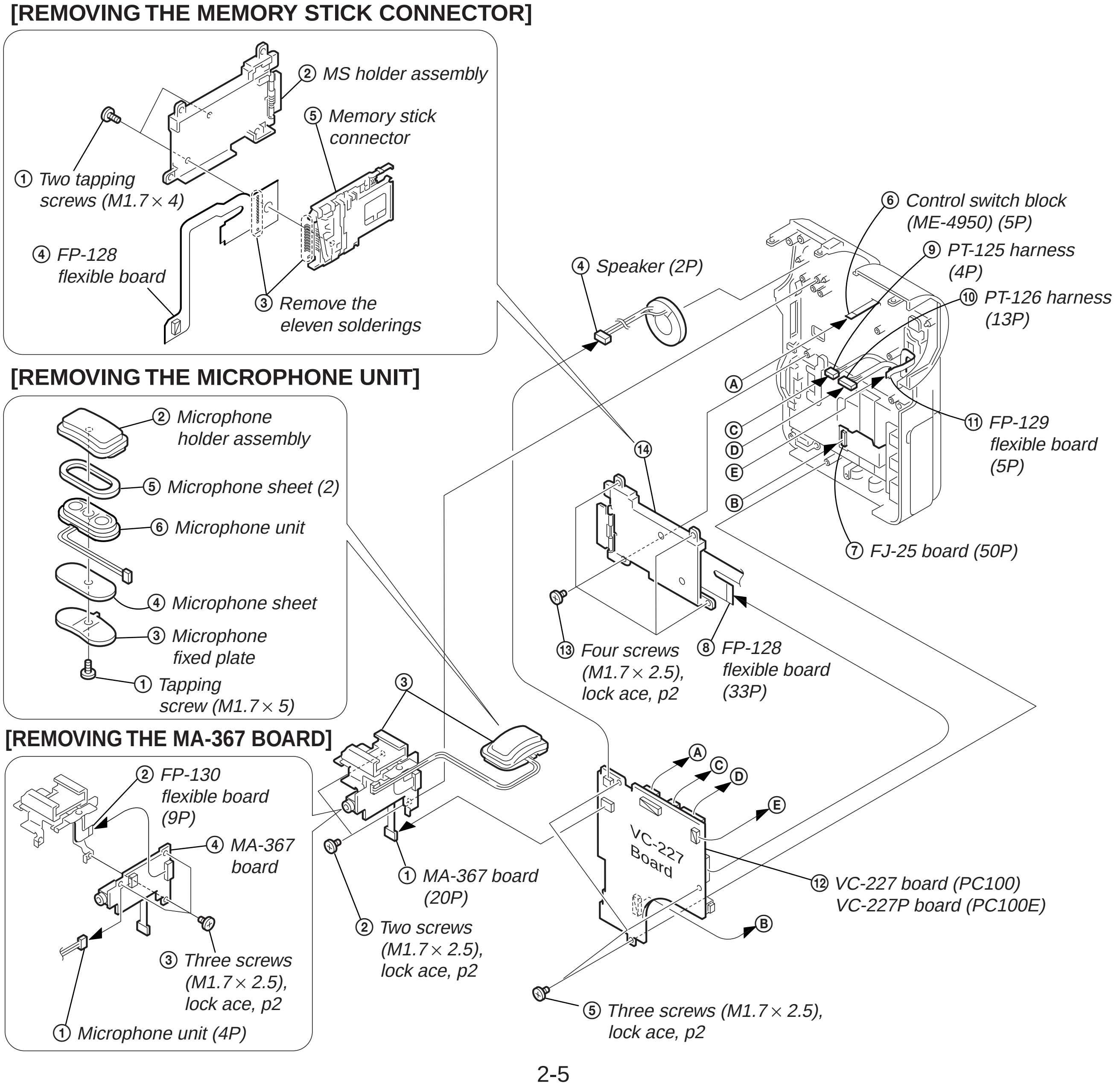
[MR-44 BOARD, MD BLOCK SERVICE POSITION-2]


MD block (MD frame, Cover assembly)
MR-44 board
MR-44 Board
Insert an insulation sheet between the MD block and the VC-227 (VC-227P) board.
AC IN
AC adaptor (8.4Vdc) (AC-VQ800) (AC-L10)
MR-44 board (100P)
Adjustment remote commander (RM-95)
VC-227
CPC-8 jig (J-6082-388-A)
Cabinet (R) block assembly
CPC-8 jig
DC IN
Cabinet (L) block assembly

2-4. LENS ASSEMBLY, EVF BLOCK ASSEMBLY, CONTROL SWITCH BLOCK (ME-4950)


⑥ EVF block assembly
④ Screw (M1.7 × 2.5), lock ace, p2
⑤ VF-138 board (20P)
VC-227 Board
② CCD/CD block assembly (CD-234 board) (60P)
① Two screws (M1.7 × 2.5), lock ace, p2
③ Lens assembly
[REMOVING THE CONTROL SWITCH BLOCK (ME-4950)]
① Control switch block (ME-4950) (5P)
③ Control switch block (ME-4950)
② Peel off the adhering portion.

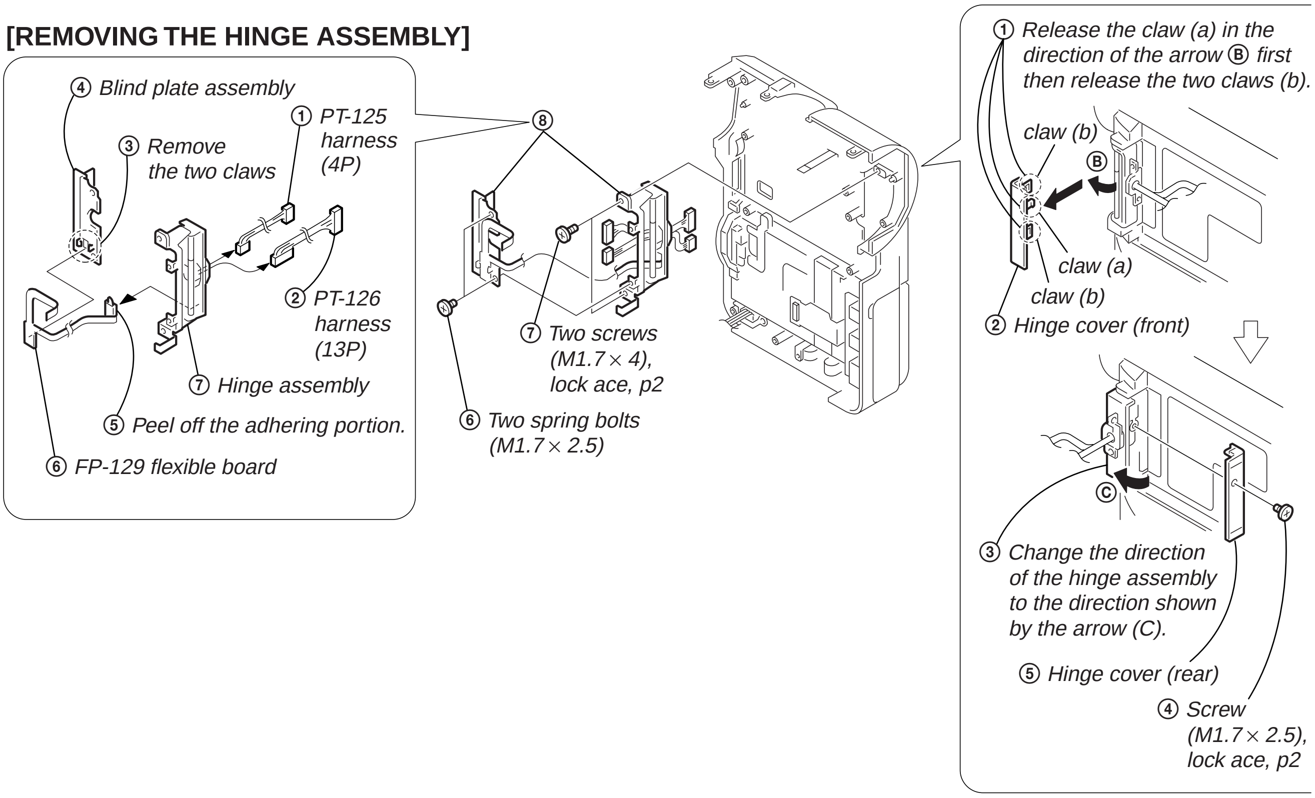
2-5. VC-227 (VC-227P) BOARD, SPEAKER, MEMORY STICK CONNECTOR, MICROPHONE UNIT, MA-367 BOARD


[REMOVING THE MEMORY STICK CONNECTOR]
② MS holder assembly
⑤ Memory stick connector
① Two tapping screws (M1.7 × 4)
④ FP-128 flexible board
③ Remove the eleven solderings
[REMOVING THE MICROPHONE UNIT]
② Microphone holder assembly
⑤ Microphone sheet (2)
⑥ Microphone unit
④ Microphone sheet
③ Microphone fixed plate
① Tapping screw (M1.7 × 5)
[REMOVING THE MA-367 BOARD]
② FP-130 flexible board (9P)
④ MA-367 board
③ Three screws (M1.7 × 2.5), lock ace, p2
① Microphone unit (4P)
⑥ Control switch block (ME-4950) (5P)
⑨ PT-125 harness (4P)
⑩ PT-126 harness (13P)
④ Speaker (2P)
A
C
D
E
B
⑪ FP-129 flexible board (5P)
⑭
⑦ FJ-25 board (50P)
⑬ Four screws (M1.7 × 2.5), lock ace, p2
⑧ FP-128 flexible board (33P)
③
A
C
D
E
VC-227 Board
① MA-367 board (20P)
② Two screws (M1.7 × 2.5), lock ace, p2
⑫ VC-227 board (PC100) VC-227P board (PC100E)
B
⑤ Three screws (M1.7 × 2.5), lock ace, p2

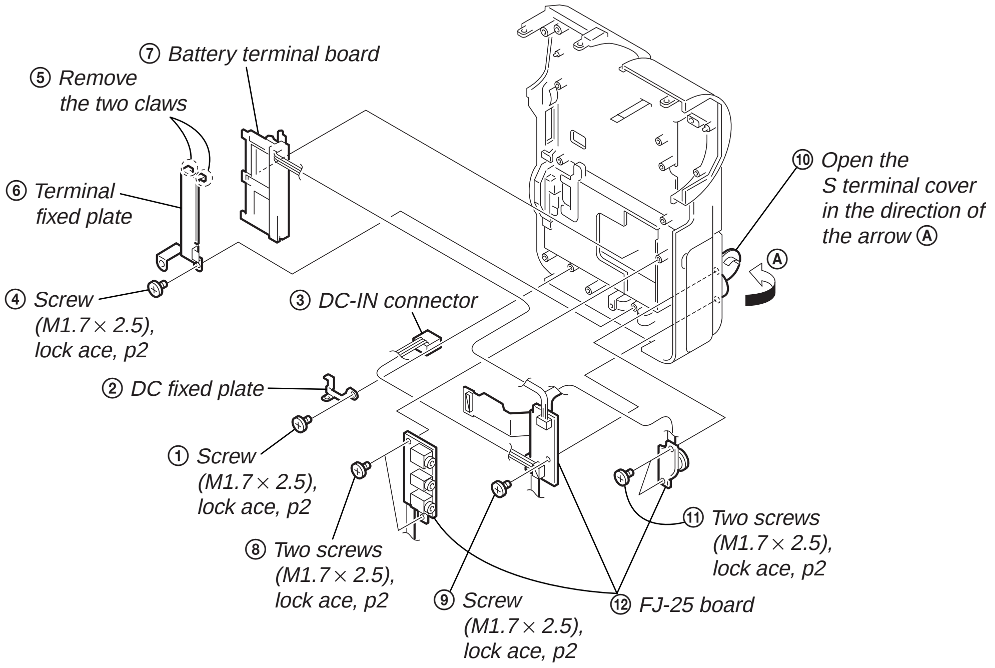
2-6. HINGE ASSEMBLY

Perform the disassembling after steps ① – ⑥ of 2-1 is complete.

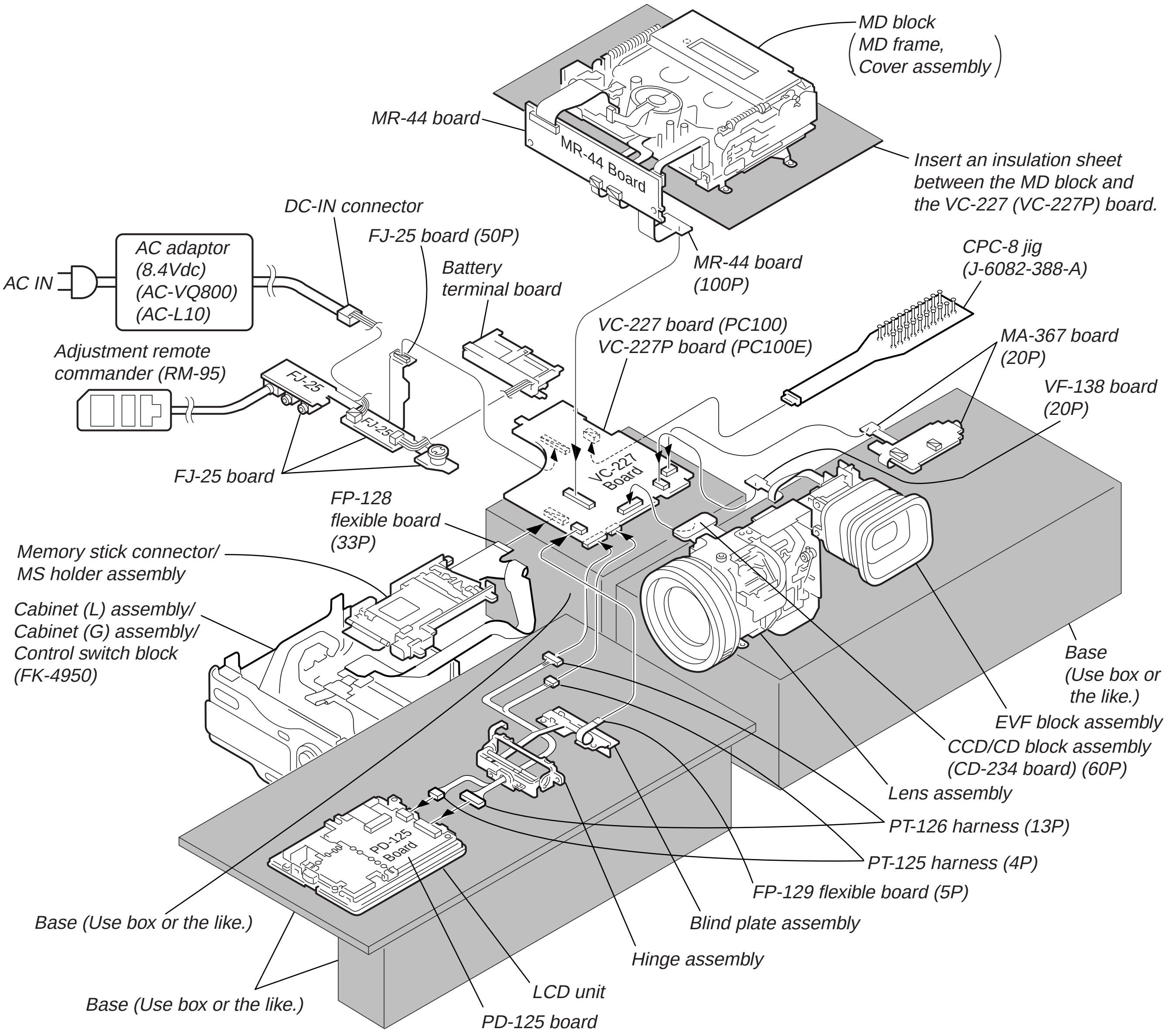
[REMOVING THE HINGE ASSEMBLY]


④ Blind plate assembly
① PT-125 harness (4P)
③ Remove the two claws
② PT-126 harness (13P)
⑦ Hinge assembly
⑤ Peel off the adhering portion.
⑥ FP-129 flexible board
⑧
⑦ Two screws (M1.7 × 4), lock ace, p2
⑥ Two spring bolts (M1.7 × 2.5)
① Release the claw (a) in the direction of the arrow Ⓑ first then release the two claws (b).
claw (b)
Ⓑ
claw (a)
claw (b)
② Hinge cover (front)
Ⓒ
③ Change the direction of the hinge assembly to the direction shown by the arrow (C).
⑤ Hinge cover (rear)
④ Screw (M1.7 × 2.5), lock ace, p2

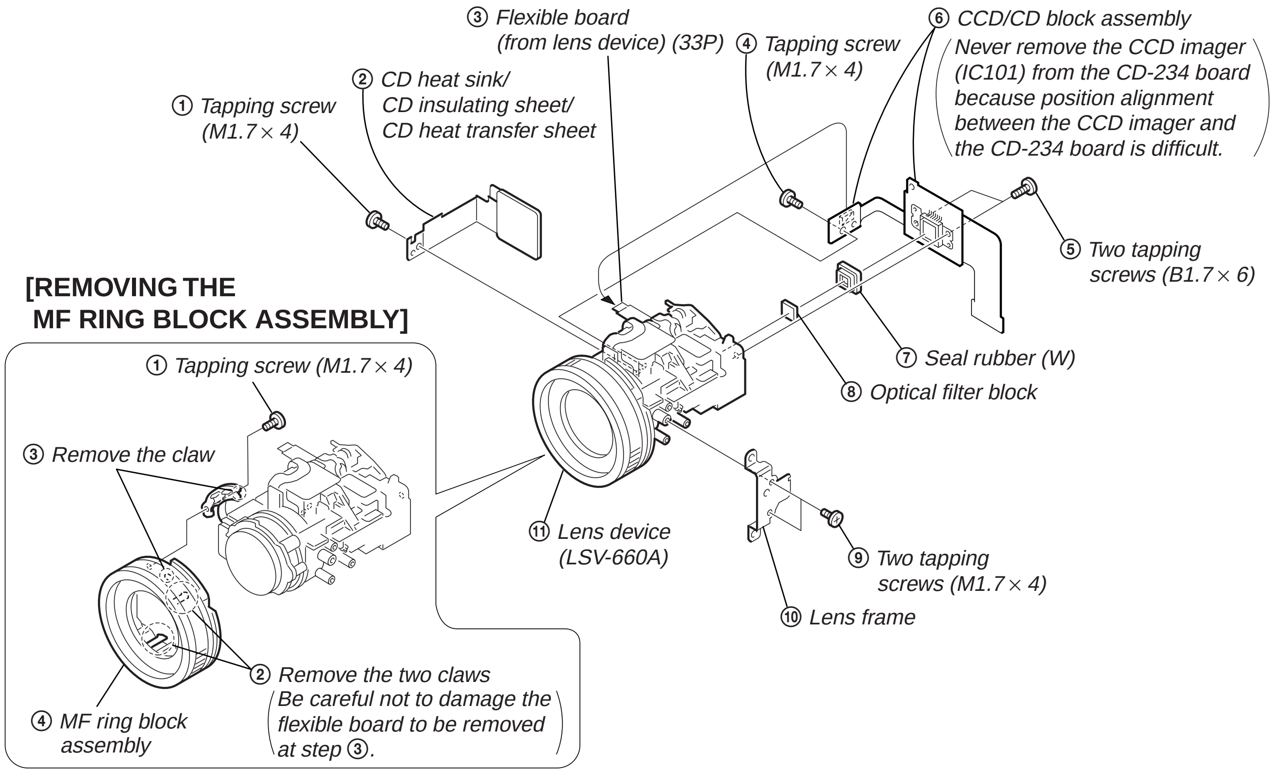
2-7. DC-IN CONNECTOR, BATTERY TERMINAL BOARD, FJ-25 BOARD


⑦ Battery terminal board
⑤ Remove the two claws
⑥ Terminal fixed plate
④ Screw (M1.7 × 2.5), lock ace, p2
③ DC-IN connector
② DC fixed plate
① Screw (M1.7 × 2.5), lock ace, p2
⑧ Two screws (M1.7 × 2.5), lock ace, p2
⑨ Screw (M1.7 × 2.5), lock ace, p2
⑫ FJ-25 board
⑪ Two screws (M1.7 × 2.5), lock ace, p2
⑩ Open the S terminal cover in the direction of the arrow Ⓐ
Ⓐ

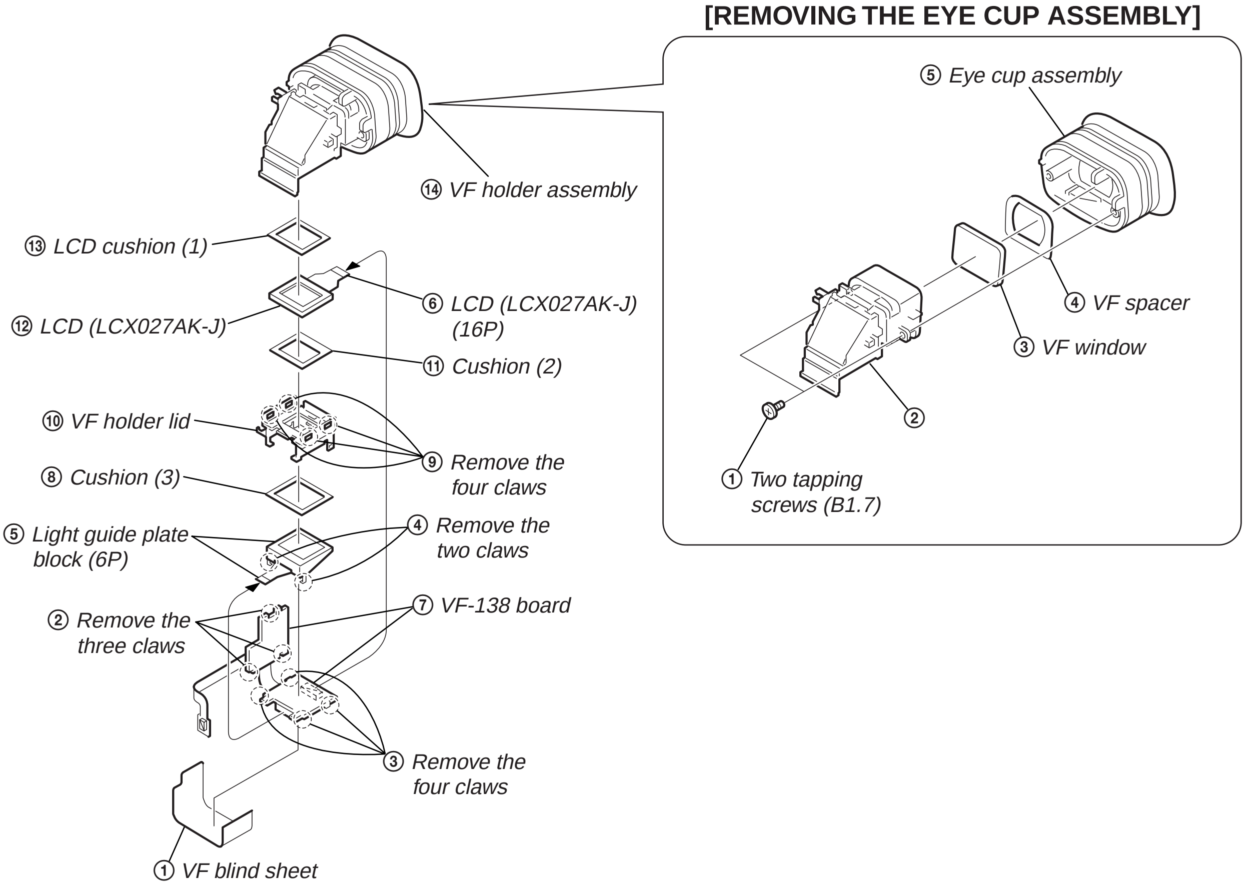
[SERVICE POSITION (Mainly for voltage measurement and check)]


MD block
(MD frame,
Cover assembly)
MR-44 board
MR-44 Board
Insert an insulation sheet between the MD block and the VC-227 (VC-227P) board.
DC-IN connector
FJ-25 board (50P)
MR-44 board (100P)
AC adaptor (8.4Vdc) (AC-VQ800) (AC-L10)
AC IN
Battery terminal board
CPC-8 jig (J-6082-388-A)
VC-227 board (PC100)
VC-227P board (PC100E)
Adjustment remote commander (RM-95)
FJ-25
MA-367 board (20P)
VF-138 board (20P)
VC-227 Board
FJ-25 board
FP-128 flexible board (33P)
Memory stick connector/ MS holder assembly
Cabinet (L) assembly/ Cabinet (G) assembly/ Control switch block (FK-4950)
Base (Use box or the like.)
EVF block assembly
CCD/CD block assembly (CD-234 board) (60P)
Lens assembly
PT-126 harness (13P)
PD-125 Board
PT-125 harness (4P)
FP-129 flexible board (5P)
Base (Use box or the like.)
Blind plate assembly
Hinge assembly
LCD unit
Base (Use box or the like.)
PD-125 board

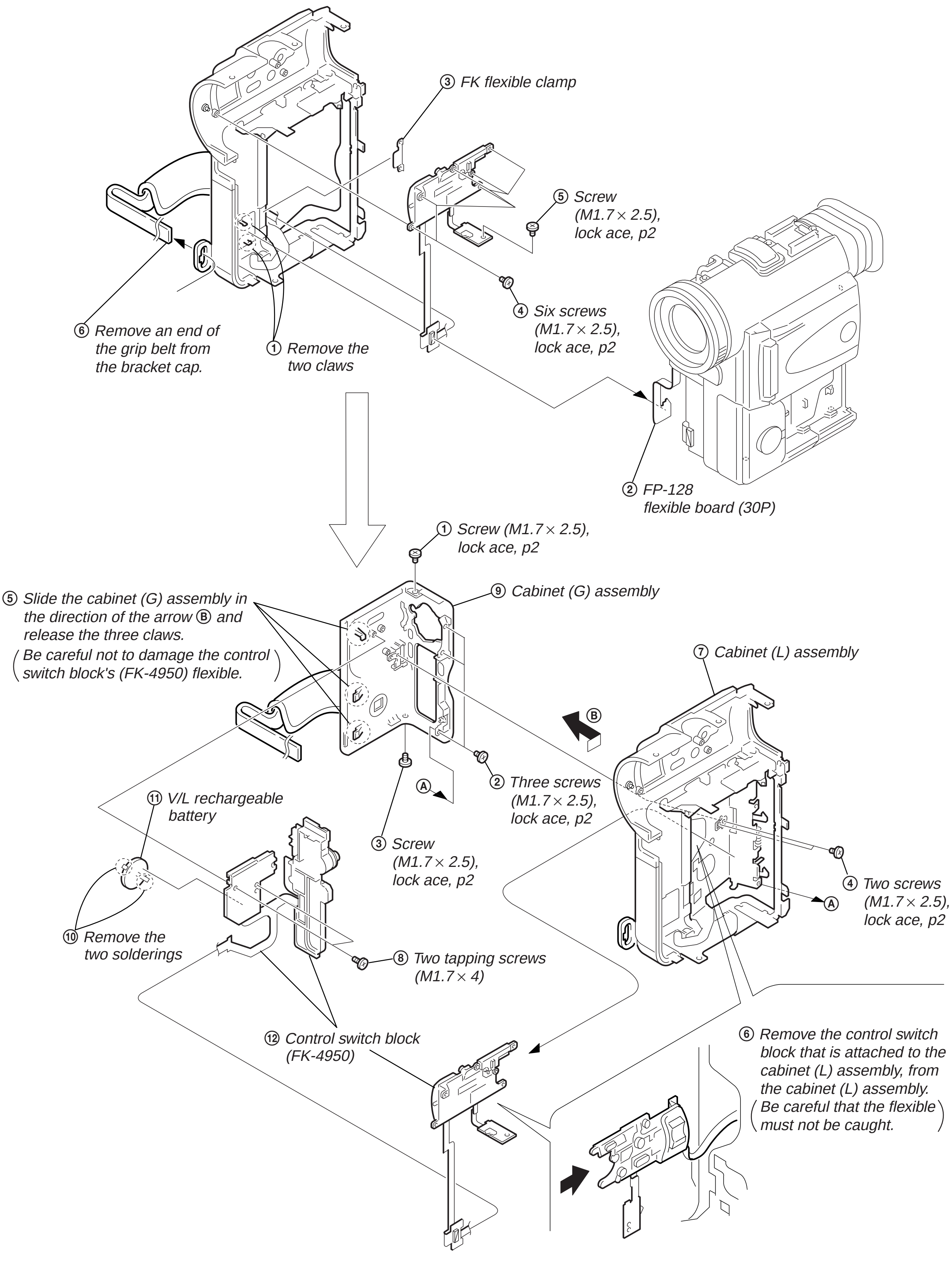
2-8. CCD/CD BLOCK ASSEMBLY, MF RING BLOCK ASSEMBLY


① Tapping screw (M1.7 × 4)
② CD heat sink/ CD insulating sheet/ CD heat transfer sheet
③ Flexible board (from lens device) (33P)
④ Tapping screw (M1.7 × 4)
⑥ CCD/CD block assembly
Never remove the CCD imager (IC101) from the CD-234 board because position alignment between the CCD imager and the CD-234 board is difficult.
⑤ Two tapping screws (B1.7 × 6)
⑦ Seal rubber (W)
⑧ Optical filter block
⑪ Lens device (LSV-660A)
⑨ Two tapping screws (M1.7 × 4)
⑩ Lens frame
[REMOVING THE MF RING BLOCK ASSEMBLY]
① Tapping screw (M1.7 × 4)
③ Remove the claw
② Remove the two claws
Be careful not to damage the flexible board to be removed at step ③.
④ MF ring block assembly

2-9. VF-138 BOARD, VF HOLDER ASSEMBLY, EYE CUP ASSEMBLY


[REMOVING THE EYE CUP ASSEMBLY]
⑭ VF holder assembly
⑬ LCD cushion (1)
⑫ LCD (LCX027AK-J)
⑥ LCD (LCX027AK-J) (16P)
⑪ Cushion (2)
⑩ VF holder lid
⑨ Remove the four claws
⑧ Cushion (3)
⑤ Light guide plate block (6P)
④ Remove the two claws
⑦ VF-138 board
② Remove the three claws
③ Remove the four claws
① VF blind sheet
⑤ Eye cup assembly
④ VF spacer
③ VF window
②
① Two tapping screws (B1.7)

2-10. CONTROL SWITCH BLOCK (FK-4950)



① Remove the two claws

② FP-128 flexible board (30P)

③ FK flexible clamp

④ Six screws (M1.7 × 2.5), lock ace, p2

⑤ Screw (M1.7 × 2.5), lock ace, p2

⑥ Remove an end of the grip belt from the bracket cap.

① Screw (M1.7 × 2.5), lock ace, p2

② Three screws (M1.7 × 2.5), lock ace, p2

③ Screw (M1.7 × 2.5), lock ace, p2

④ Two screws (M1.7 × 2.5), lock ace, p2

⑤ Slide the cabinet (G) assembly in the direction of the arrow Ⓑ and release the three claws.
(Be careful not to damage the control switch block's (FK-4950) flexible.)

⑥ Remove the control switch block that is attached to the cabinet (L) assembly, from the cabinet (L) assembly.
(Be careful that the flexible must not be caught.)

⑦ Cabinet (L) assembly

⑧ Two tapping screws (M1.7 × 4)

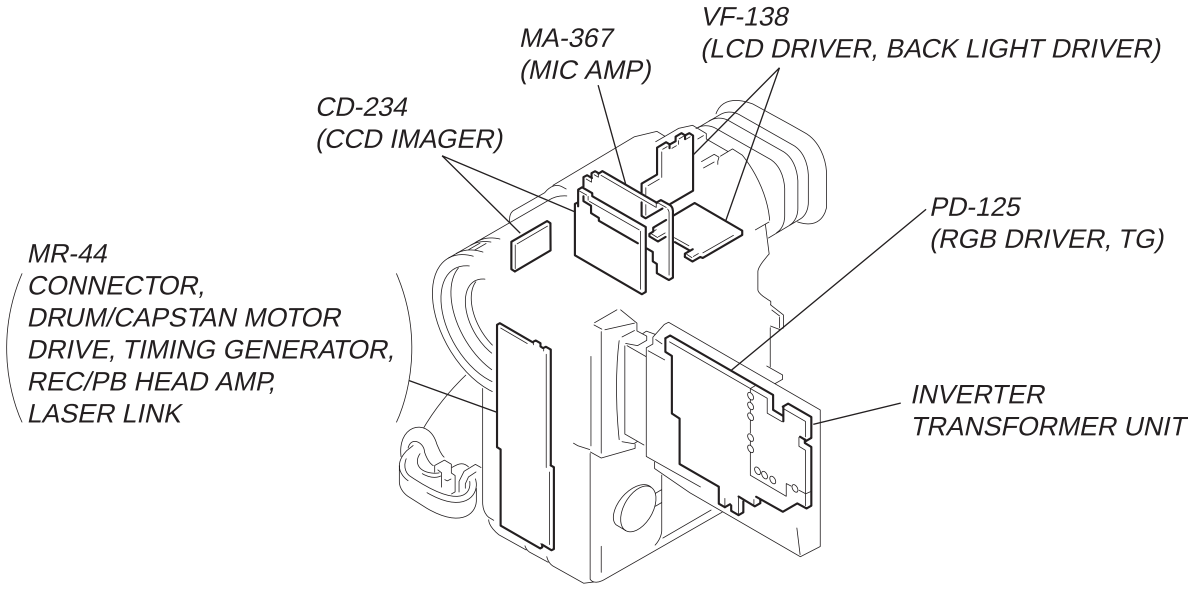
⑨ Cabinet (G) assembly

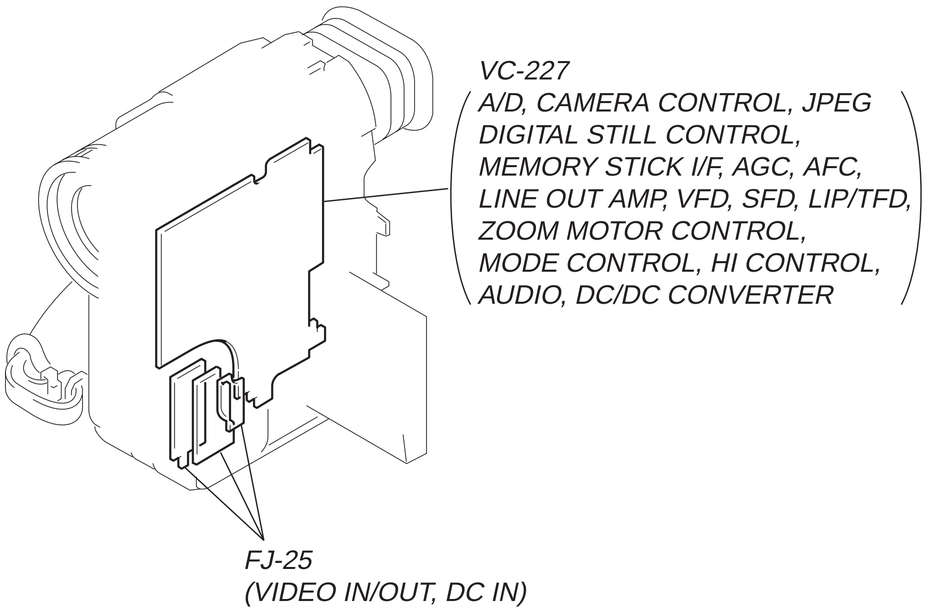
⑩ Remove the two solderings

⑪ V/L rechargeable battery

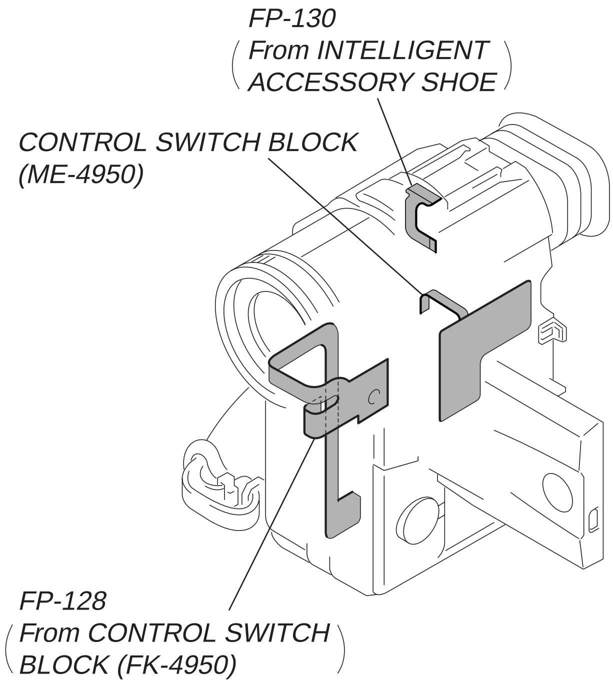
⑫ Control switch block (FK-4950)

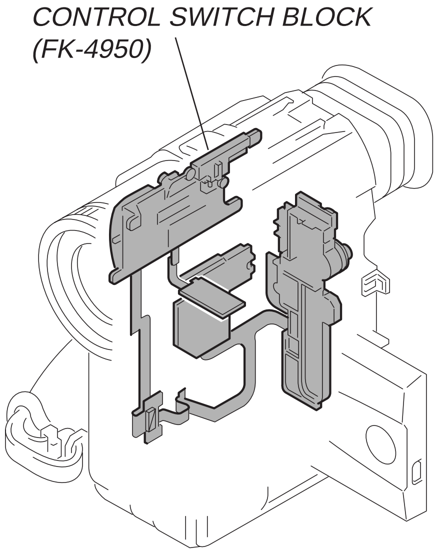
2-11. CIRCUIT BOARDS LOCATION

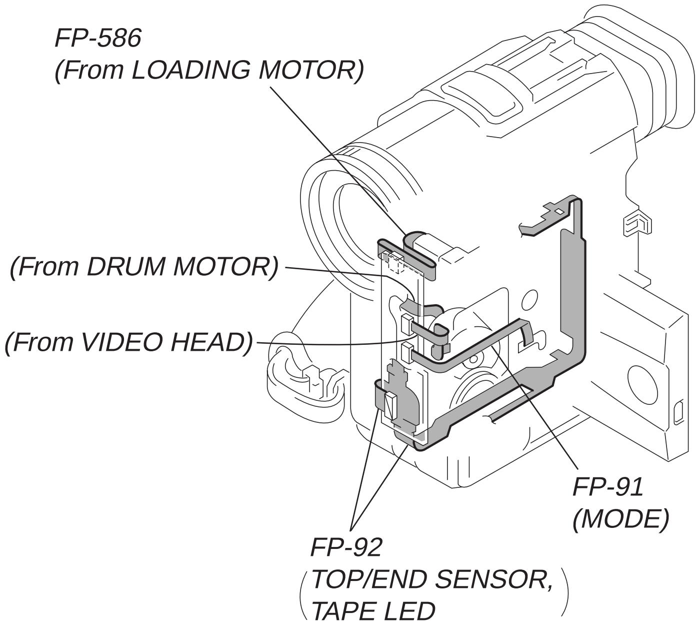

VF-138
(LCD DRIVER, BACK LIGHT DRIVER)
MA-367
(MIC AMP)
CD-234
(CCD IMAGER)
PD-125
(RGB DRIVER, TG)
MR-44
CONNECTOR,
DRUM/CAPSTAN MOTOR
DRIVE, TIMING GENERATOR,
REC/PB HEAD AMP,
LASER LINK
INVERTER
TRANSFORMER UNIT

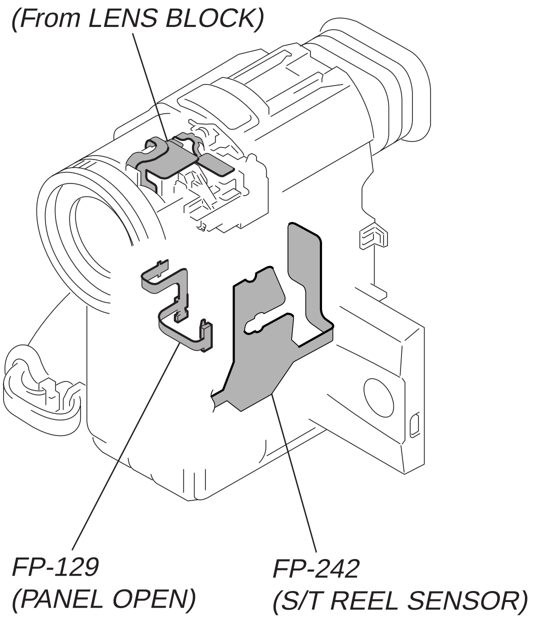

VC-227
A/D, CAMERA CONTROL, JPEG
DIGITAL STILL CONTROL,
MEMORY STICK I/F, AGC, AFC,
LINE OUT AMP, VFD, SFD, LIP/TFD,
ZOOM MOTOR CONTROL,
MODE CONTROL, HI CONTROL,
AUDIO, DC/DC CONVERTER
FJ-25
(VIDEO IN/OUT, DC IN)

2-12. FLEXIBLE BOARDS LOCATION


FP-130
(From INTELLIGENT ACCESSORY SHOE)
CONTROL SWITCH BLOCK
(ME-4950)
FP-128
(From CONTROL SWITCH BLOCK (FK-4950))


CONTROL SWITCH BLOCK
(FK-4950)

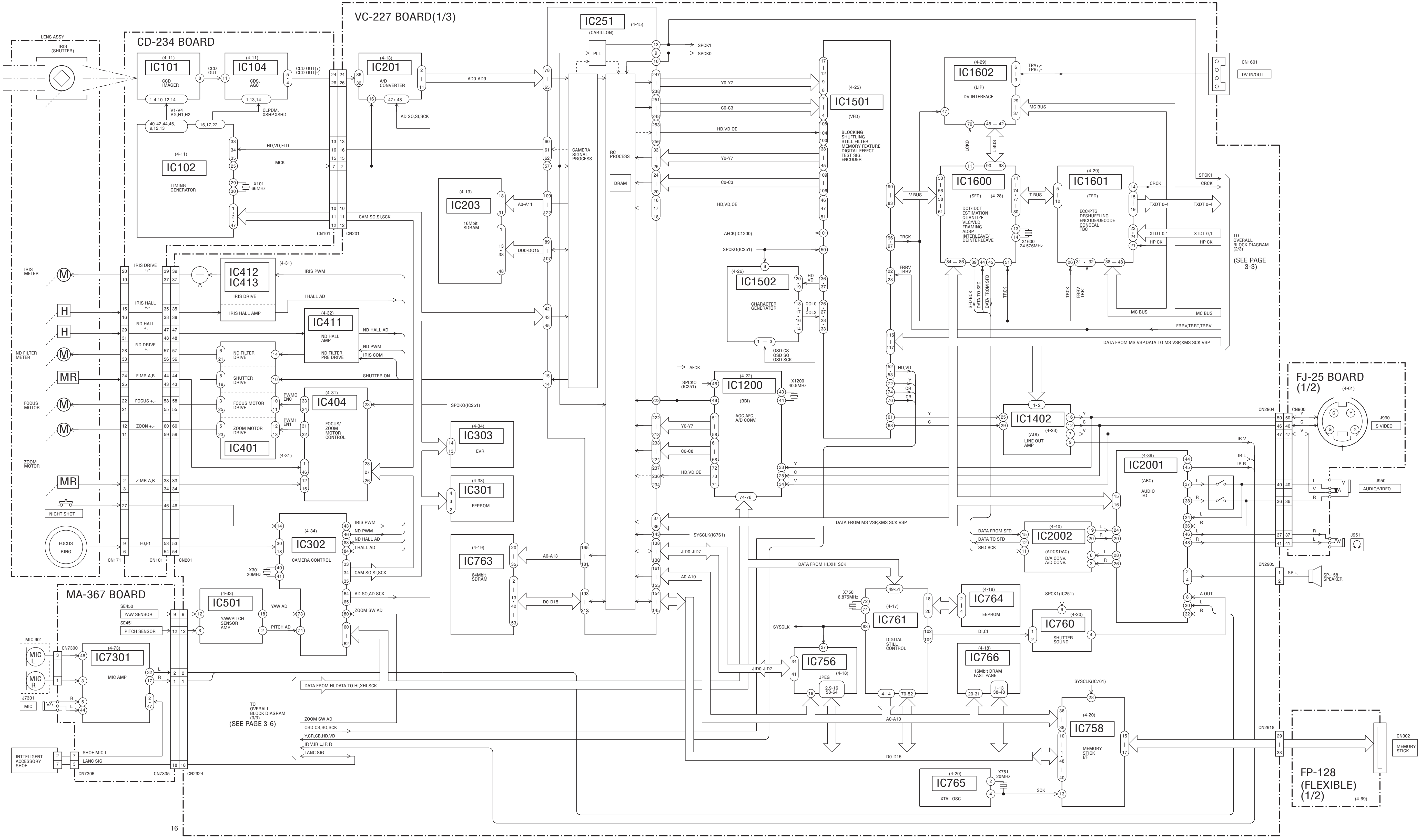

FP-586
(From LOADING MOTOR)
(From DRUM MOTOR)
(From VIDEO HEAD)
FP-91
(MODE)
FP-92
(TOP/END SENSOR, TAPE LED)


(From LENS BLOCK)
FP-129
(PANEL OPEN)
FP-242
(S/T REEL SENSOR)

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM-1

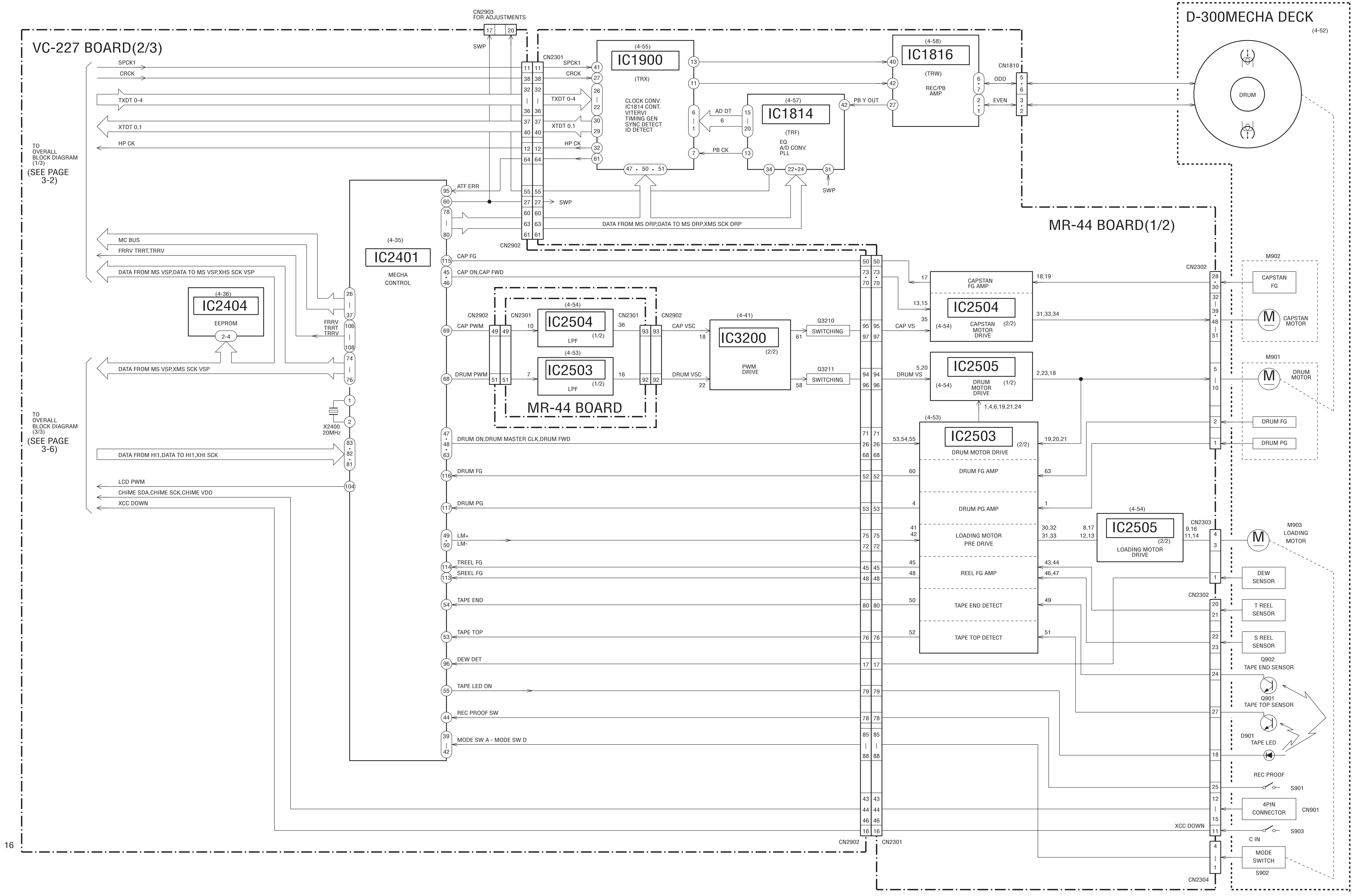
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



VC-227 BOARD(1/3)
CD-234 BOARD
LENS ASSY
IRIS (SHUTTER)
IC101 CCD IMAGER (4-11)
IC104 CDS, AGC (4-11)
IC201 A/D CONVERTER (4-13)
IC102 TIMING GENERATOR (4-11)
X101 66MHz
IC251 (CARILLON) (4-15)
PLL
CAMERA SIGNAL PROCESS
RC PROCESS
DRAM
IC203 16Mbit SDRAM (4-13)
IC1501 (VFD) (4-25) BLOCKING SHUFFLING STILL FILTER MEMORY FEATURE DIGITAL EFFECT TEST SIG. ENCODER
IC1602 (LIP) DV INTERFACE (4-29)
IC1600 (SFD) (4-28) DCT/IDCT ESTIMATION QUANTIZE VLC/VLD FRAMING ADSP INTERLEAVE/DEINTERLEAVE
X1600 24.576MHz
IC1601 (TFD) (4-29) ECC/PTG DESHUFFLING ENCODE/DECODE CONCEAL TBC
CN1601 DV IN/OUT
TO OVERALL BLOCK DIAGRAM (2/3) (SEE PAGE 3-3)
IC1502 CHARACTER GENERATOR (4-26)
IC1200 (BBI) AGC,AFC, A/D CONV. (4-22)
X1200 40.5MHz
IC1402 (ADI) LINE OUT AMP (4-23)
IC2001 (ABC) AUDIO I/O (4-39)
IC2002 (ADC&DAC) D/A CONV. A/D CONV. (4-40)
FJ-25 BOARD (1/2) (4-61)
J990 S VIDEO
J950 AUDIO/VIDEO
J951
SP-158 SPEAKER
IC412 IC413 IRIS DRIVE IRIS HALL AMP (4-31)
IC411 ND HALL AMP ND FILTER PRE DRIVE (4-32)
IC404 FOCUS/ZOOM MOTOR CONTROL (4-31)
IC401 ND FILTER DRIVE SHUTTER DRIVE FOCUS MOTOR DRIVE ZOOM MOTOR DRIVE (4-31)
IC303 EVR (4-34)
IC301 EEPROM (4-33)
IC302 CAMERA CONTROL (4-34)
X301 20MHz
IC763 64Mbit SDRAM (4-19)
IC501 YAW/PITCH SENSOR AMP (4-33)
MA-367 BOARD
SE450 YAW SENSOR
SE451 PITCH SENSOR
IC7301 MIC AMP (4-73)
MIC 901
J7301 MIC
INTELLIGENT ACCESSORY SHOE
IRIS METER
ND FILTER METER
FOCUS MOTOR
ZOOM MOTOR
NIGHT SHOT
FOCUS RING
IC761 DIGITAL STILL CONTROL (4-17)
X750 6.875MHz
IC764 EEPROM (4-18)
IC760 SHUTTER SOUND (4-20)
IC756 JPEG (4-18)
IC766 16Mbit DRAM FAST PAGE (4-18)
IC758 MEMORY STICK I/F (4-20)
IC765 XTAL OSC (4-20)
X751 20MHz
FP-128 (FLEXIBLE) (1/2) (4-69)
CN002 MEMORY STICK
TO OVERALL BLOCK DIAGRAM (3/3) (SEE PAGE 3-6)
DATA FROM HI,DATA TO HI,XHI SCK
ZOOM SW AD
OSD CS,SO,SCK
Y,CR,CB,HD,VD
IR V,IR L,IR R
LANC SIG
SHOE MIC L
LANC SIG
A0-A10
D0-D15

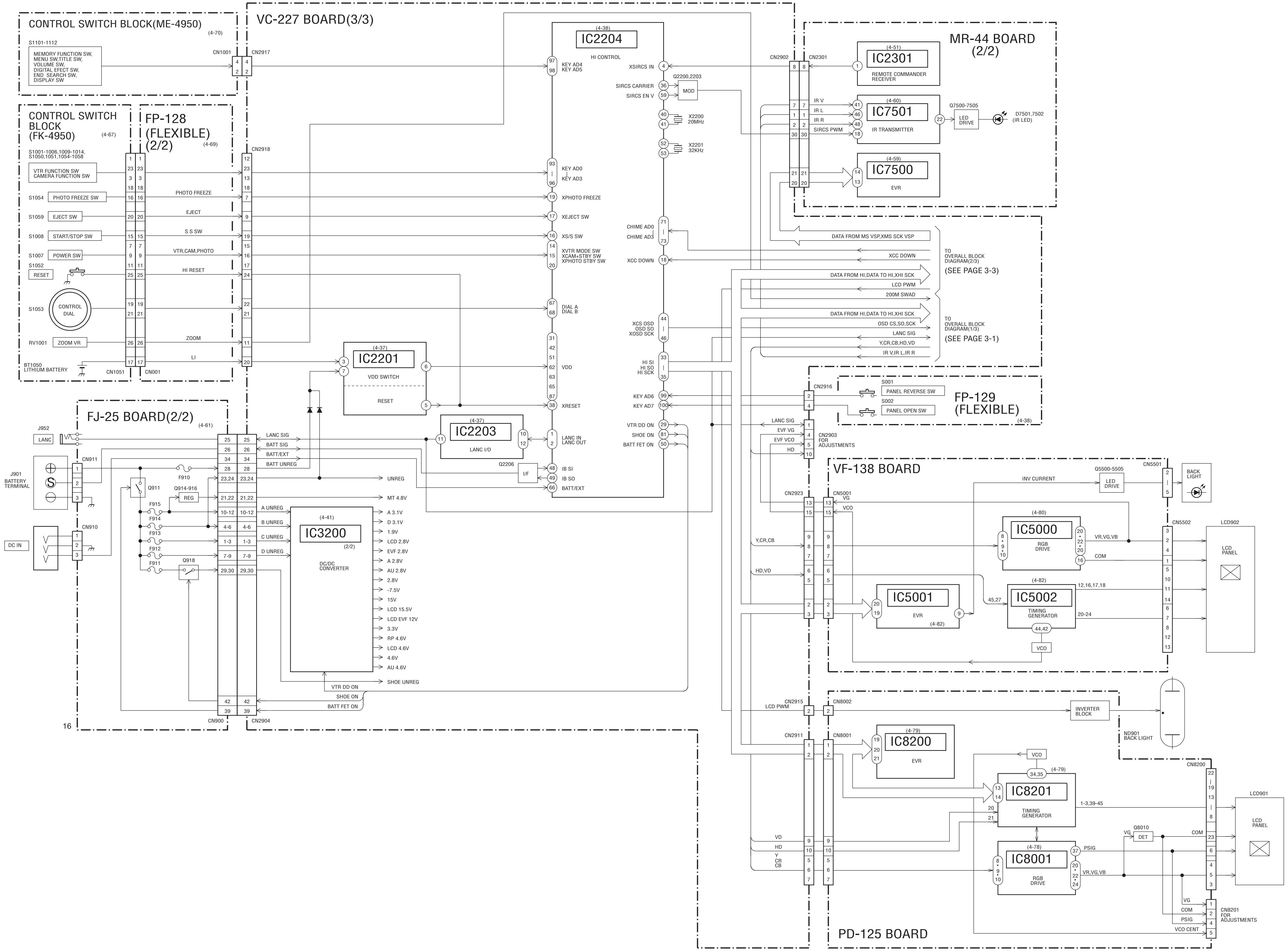
OVERALL BLOCK DIAGRAM-2

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


VC-227 BOARD(2/3)
CN2903 FOR ADJUSTMENTS
SWP
CN2301
SPCK1
CRCK
TXDT 0-4
XTDT 0,1
HP CK
TO OVERALL BLOCK DIAGRAM (1/3)
(SEE PAGE 3-2)
IC1900
(4-55)
(TRX)
CLOCK CONV.
IC1814 CONT.
VITERVI
TIMING GEN
SYNC DETECT
ID DETECT
AD DT
PB CK
IC1814
(4-57)
(TRF)
EQ
A/D CONV.
PLL
PB Y OUT
IC1816
(4-58)
(TRW)
REC/PB AMP
CN1810
ODD
EVEN
D-300MECHA DECK
(4-52)
DRUM
ATF ERR
DATA FROM MS DRP,DATA TO MS DRP,XMS SCK DRP
MR-44 BOARD(1/2)
CN2902
MC BUS
FRRV TRRT,TRRV
DATA FROM MS VSP,DATA TO MS VSP,XHS SCK VSP
IC2401
(4-35)
MECHA CONTROL
IC2404
(4-36)
EEPROM
FRRV
TRRT
TRRV
DATA FROM MS VSP,XMS SCK VSP
X2400 20MHz
TO OVERALL BLOCK DIAGRAM (3/3)
(SEE PAGE 3-6)
DATA FROM HI1,DATA TO HI1,XHI SCK
LCD PWM
CHIME SDA,CHIME SCK,CHIME VDD
XCC DOWN
CAP FG
CAP ON,CAP FWD
CAP PWM
DRUM PWM
IC2504
(4-54)
LPF
IC2503
(4-53)
MR-44 BOARD
CAP VSC
DRUM VSC
IC3200
(4-41)
PWM DRIVE
Q3210
Q3211
SWITCHING
CAP VS
DRUM VS
CAPSTAN FG AMP
CAPSTAN MOTOR DRIVE
IC2505
DRUM MOTOR DRIVE
M902
CAPSTAN FG
CAPSTAN MOTOR
M901
DRUM MOTOR
DRUM FG
DRUM PG
CN2302
DRUM ON,DRUM MASTER CLK,DRUM FWD
DRUM FG
DRUM PG
LM+
LM-
TREEL FG
SREEL FG
TAPE END
TAPE TOP
DEW DET
TAPE LED ON
REC PROOF SW
MODE SW A - MODE SW D
DRUM MOTOR DRIVE
DRUM FG AMP
DRUM PG AMP
LOADING MOTOR PRE DRIVE
REEL FG AMP
TAPE END DETECT
TAPE TOP DETECT
LOADING MOTOR DRIVE
CN2303
M903
LOADING MOTOR
DEW SENSOR
T REEL SENSOR
S REEL SENSOR
Q902
TAPE END SENSOR
Q901
TAPE TOP SENSOR
D901
TAPE LED
REC PROOF
S901
4PIN CONNECTOR
CN901
S903
C IN
MODE SWITCH
S902
CN2304
16

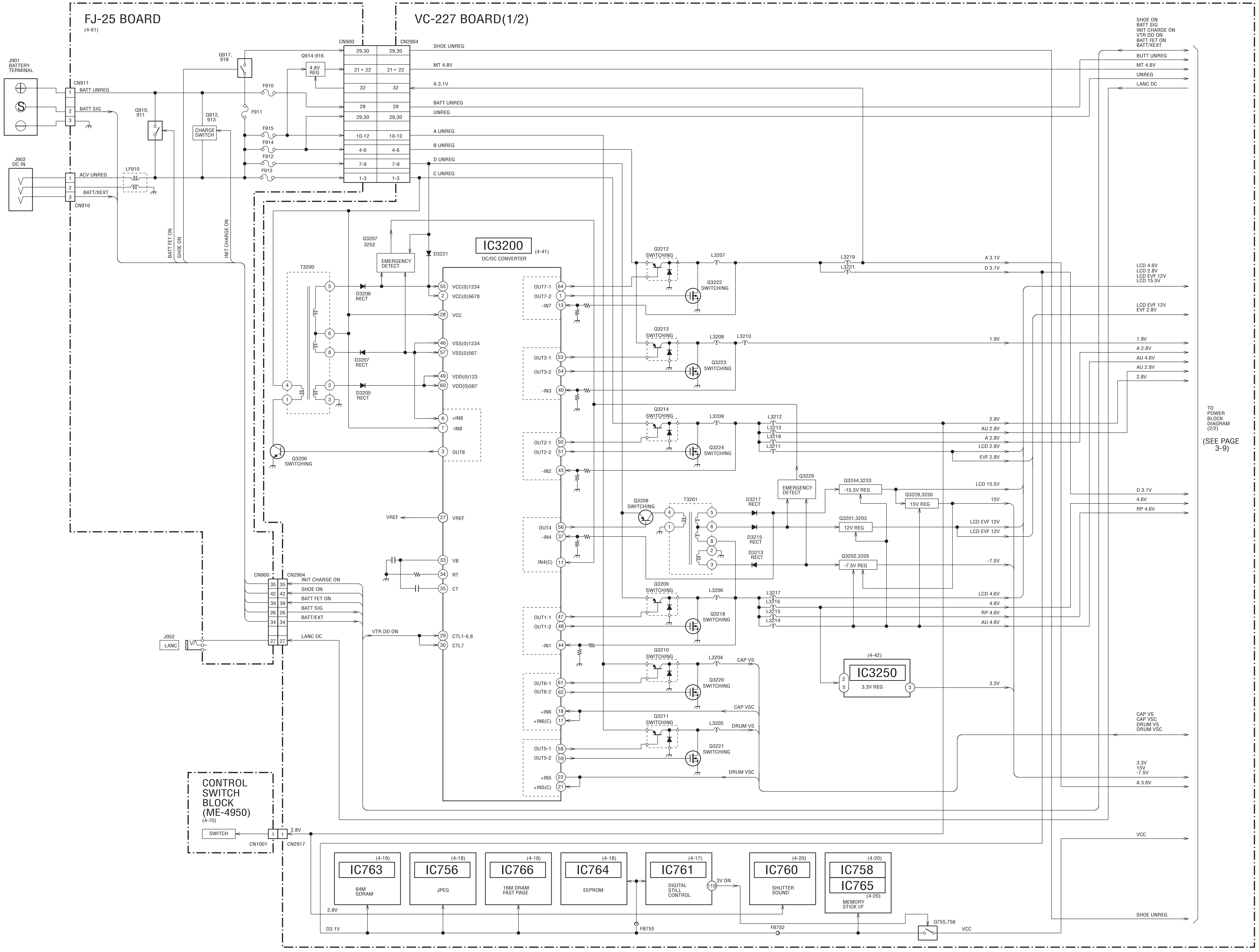
OVERALL BLOCK DIAGRAM-3

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


CONTROL SWITCH BLOCK(ME-4950)
(4-70)
S1101-1112
MEMORY FUNCTION SW, MENU SW,TITLE SW, VOLUME SW, DIGITAL EFECT SW, END SEARCH SW, DISPLAY SW
CN1001
CN2917
CONTROL SWITCH BLOCK (FK-4950)
(4-67)
FP-128 (FLEXIBLE) (2/2)
(4-69)
S1001-1006,1009-1014, S1050,1051,1054-1058
VTR FUNCTION SW CAMERA FUNCTION SW
S1054 PHOTO FREEZE SW
S1059 EJECT SW
S1008 START/STOP SW
S1007 POWER SW
S1052 RESET
S1053 CONTROL DIAL
RV1001 ZOOM VR
BT1050 LITHIUM BATTERY
CN1051
CN001
CN2918
PHOTO FREEZE
EJECT
S S SW
VTR,CAM,PHOTO
HI RESET
ZOOM
LI
VC-227 BOARD(3/3)
(4-38)
IC2204
HI CONTROL
KEY AD4
KEY AD5
KEY AD0
KEY AD3
XPHOTO FREEZE
XEJECT SW
XS/S SW
XVTR MODE SW
XCAM+STBY SW
XPHOTO STBY SW
DIAL A
DIAL B
VDD
XRESET
LANC IN
LANC OUT
IB SI
IB SO
BATT/EXT
XSIRCS IN
SIRCS CARRIER
SIRCS EN V
Q2200,2203
MOD
X2200 20MHz
X2201 32KHz
CHIME AD0
CHIME AD3
XCC DOWN
XCS OSD
OSD SO
XOSD SCK
HI SI
HI SO
HI SCK
KEY AD6
KEY AD7
VTR DD ON
SHOE ON
BATT FET ON
(4-37)
IC2201
VDD SWITCH
RESET
(4-37)
IC2203
LANC I/O
Q2206
I/F
FJ-25 BOARD(2/2)
(4-61)
J952
LANC
J901 BATTERY TERMINAL
CN911
CN910
DC IN
Q911
F910
Q914-916
REG
F915
F914
F913
F912
F911
Q918
LANC SIG
BATT SIG
BATT/EXT
BATT UNREG
UNREG
MT 4.8V
A UNREG
B UNREG
C UNREG
D UNREG
(4-41)
IC3200
(2/2)
DC/DC CONVERTER
A 3.1V
D 3.1V
1.9V
LCD 2.8V
EVF 2.8V
A 2.8V
AU 2.8V
2.8V
-7.5V
15V
LCD 15.5V
LCD EVF 12V
3.3V
RP 4.6V
LCD 4.6V
4.6V
AU 4.6V
SHOE UNREG
VTR DD ON
SHOE ON
BATT FET ON
CN900
CN2904
16
MR-44 BOARD (2/2)
CN2902
CN2301
(4-51)
IC2301
REMOTE COMMANDER RECEIVER
IR V
IR L
IR R
SIRCS PWM
(4-60)
IC7501
IR TRANSMITTER
Q7500-7505
LED DRIVE
D7501,7502 (IR LED)
(4-59)
IC7500
EVR
DATA FROM MS VSP,XMS SCK VSP
XCC DOWN
DATA FROM HI,DATA TO HI,XHI SCK
LCD PWM
200M SWAD
TO OVERALL BLOCK DIAGRAM(2/3)
(SEE PAGE 3-3)
DATA FROM HI,DATA TO HI,XHI SCK
OSD CS,SO,SCK
LANC SIG
Y,CR,CB,HD,VD
IR V,IR L,IR R
TO OVERALL BLOCK DIAGRAM(1/3)
(SEE PAGE 3-1)
CN2916
S001
PANEL REVERSE SW
S002
PANEL OPEN SW
FP-129 (FLEXIBLE)
(4-38)
LANC SIG
EVF VG
EVF VCO
HD
CN2903 FOR ADJUSTMENTS
VF-138 BOARD
CN2923
CN5001
VG
VCO
Y,CR,CB
HD,VD
INV CURRENT
Q5500-5505
LED DRIVE
CN5501
BACK LIGHT
(4-80)
IC5000
RGB DRIVE
VR,VG,VB
COM
CN5502
LCD902
LCD PANEL
IC5001
EVR
(4-82)
(4-82)
IC5002
TIMING GENERATOR
45,27
12,16,17,18
20-24
44,42
VCO
CN2915
LCD PWM
CN8002
INVERTER BLOCK
ND901 BACK LIGHT
CN2911
CN8001
(4-79)
IC8200
EVR
VCO
34,35
(4-79)
IC8201
TIMING GENERATOR
1-3,39-45
CN8200
LCD901
LCD PANEL
Q8010
DET
VG
COM
VD
HD
Y
CR
CB
(4-78)
IC8001
RGB DRIVE
PSIG
VR,VG,VB
VG
COM
PSIG
VCO CENT
CN8201 FOR ADJUSTMENTS
PD-125 BOARD

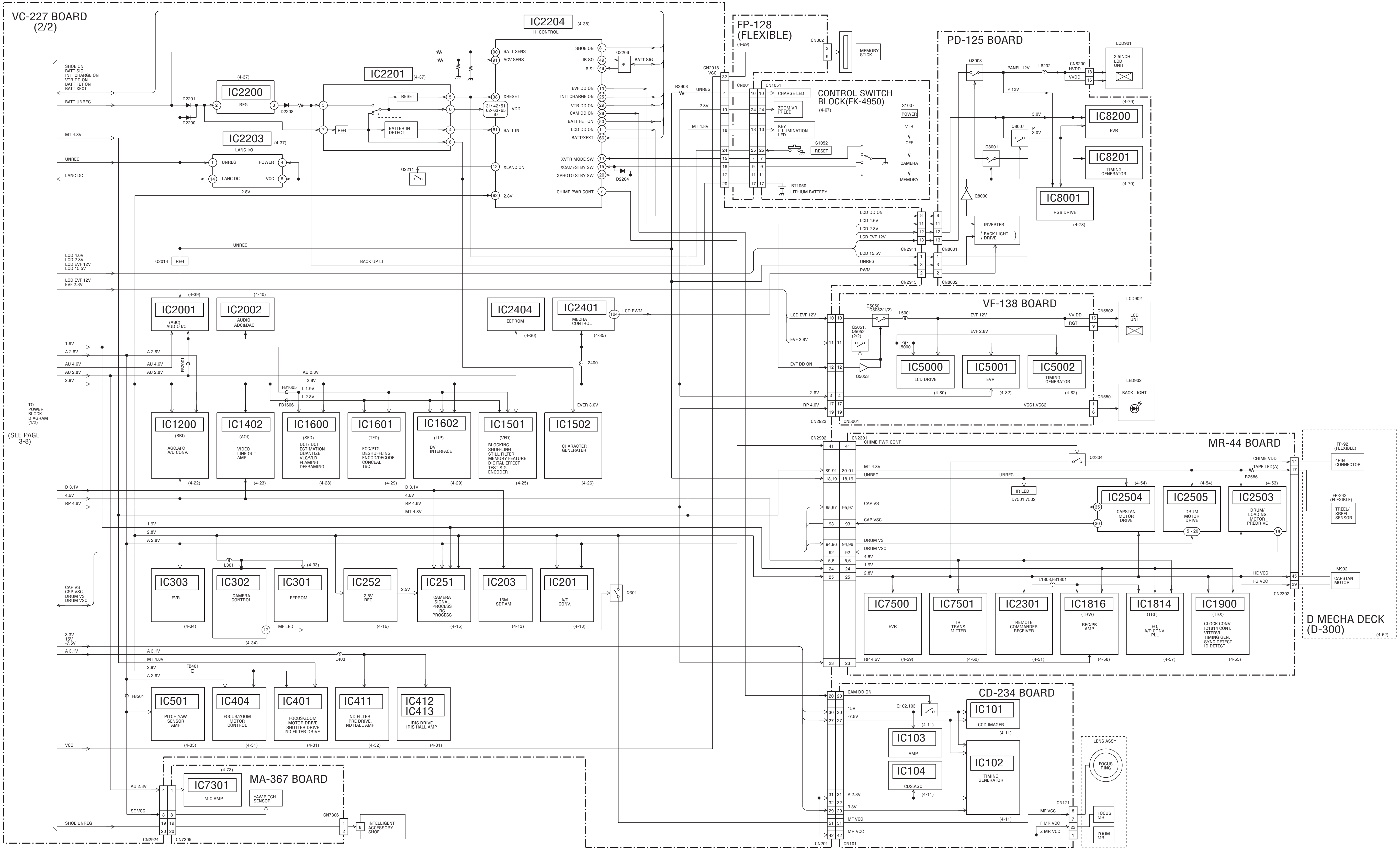
3-2. POWER BLOCK DIAGRAM-1

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


FJ-25 BOARD
(4-61)
VC-227 BOARD(1/2)
J901 BATTERY TERMINAL
J902 DC IN
CN911
BATT UNREG
BATT SIG
CN910
ACV UNREG
BATT/XEXT
LF910
Q910, 911
Q912, 913
CHARGE SWITCH
Q917, 918
Q914-916
4.8V REG
F910
F911
F915
F914
F912
F913
CN900
CN2904
SHOE UNREG
MT 4.8V
A 3.1V
BATT UNREG
UNREG
A UNREG
B UNREG
D UNREG
C UNREG
BATT FET ON
SHOE ON
INIT CHARGE ON
IC3200
(4-41)
DC/DC CONVERTER
Q3207 3252
EMERGENCY DETECT
D3221
T3200
D3206 RECT
D3207 RECT
D3205 RECT
Q3206 SWITCHING
VCC(0)1234
VCC(0)5678
VCC
VSS(0)1234
VSS(0)567
VDD(0)123
VDD(0)567
+IN8
-IN8
OUT8
VREF
VB
RT
CT
CTL1-6,8
CTL7
VTR DD ON
OUT7-1
OUT7-2
-IN7
OUT3-1
OUT3-2
-IN3
OUT2-1
OUT2-2
-IN2
OUT4
-IN4
IN4(C)
OUT1-1
OUT1-2
-IN1
OUT6-1
OUT6-2
+IN6
+IN6(C)
OUT5-1
OUT5-2
+IN5
+IN5(C)
Q3212 SWITCHING
Q3222 SWITCHING
Q3213 SWITCHING
Q3223 SWITCHING
Q3214 SWITCHING
Q3224 SWITCHING
Q3208 SWITCHING
T3201
Q3209 SWITCHING
Q3218 SWITCHING
Q3210 SWITCHING
Q3220 SWITCHING
Q3211 SWITCHING
Q3221 SWITCHING
L3207
L3219
L3221
L3208
L3210
L3209
L3212
L3213
L3218
L3211
L3206
L3217
L3216
L3215
L3214
L3204
L3205
CAP VS
CAP VSC
DRUM VS
DRUM VSC
D3217 RECT
D3215 RECT
D3213 RECT
Q3229
EMERGENCY DETECT
Q3244,3233
-15.5V REG
Q3228,3230
15V REG
Q3201,3203
12V REG
Q3202,3205
-7.5V REG
IC3250
(4-42)
3.3V REG
A 3.1V
D 3.1V
1.9V
2.8V
AU 2.8V
A 2.8V
LCD 2.8V
EVF 2.8V
LCD 15.5V
15V
LCD EVF 12V
-7.5V
LCD 4.6V
4.6V
RP 4.6V
AU 4.6V
3.3V
SHOE ON
BATT SIG
INIT CHARGE ON
VTR DD ON
BATT FET ON
BATT/XEXT
BUTT UNREG
MT 4.8V
UNREG
LANC DC
LCD 4.6V
LCD 2.8V
LCD EVF 12V
LCD 15.5V
LCD EVF 12V
EVF 2.8V
1.9V
A 2.8V
AU 4.6V
AU 2.8V
2.8V
TO POWER BLOCK DIAGRAM (2/2)
(SEE PAGE 3-9)
D 3.1V
4.6V
RP 4.6V
CAP VS
CAP VSC
DRUM VS
DRUM VSC
3.3V
15V
-7.5V
A 3.6V
VCC
SHOE UNREG
CN900
CN2904
INIT CHARGE ON
SHOE ON
BATT FET ON
BATT SIG
BATT/EXT
LANC DC
J952
LANC
CONTROL SWITCH BLOCK (ME-4950)
(4-70)
SWITCH
CN1001
CN2917
2.8V
IC763
(4-19)
64M SDRAM
IC756
(4-18)
JPEG
IC766
(4-18)
16M DRAM FAST PAGE
IC764
(4-18)
EEPROM
IC761
(4-17)
DIGITAL STILL CONTROL
3V ON
IC760
(4-20)
SHUTTER SOUND
IC758
IC765
(4-20)
MEMORY STICK I/F
Q755,756
VCC
D3.1V
FB755
FB752

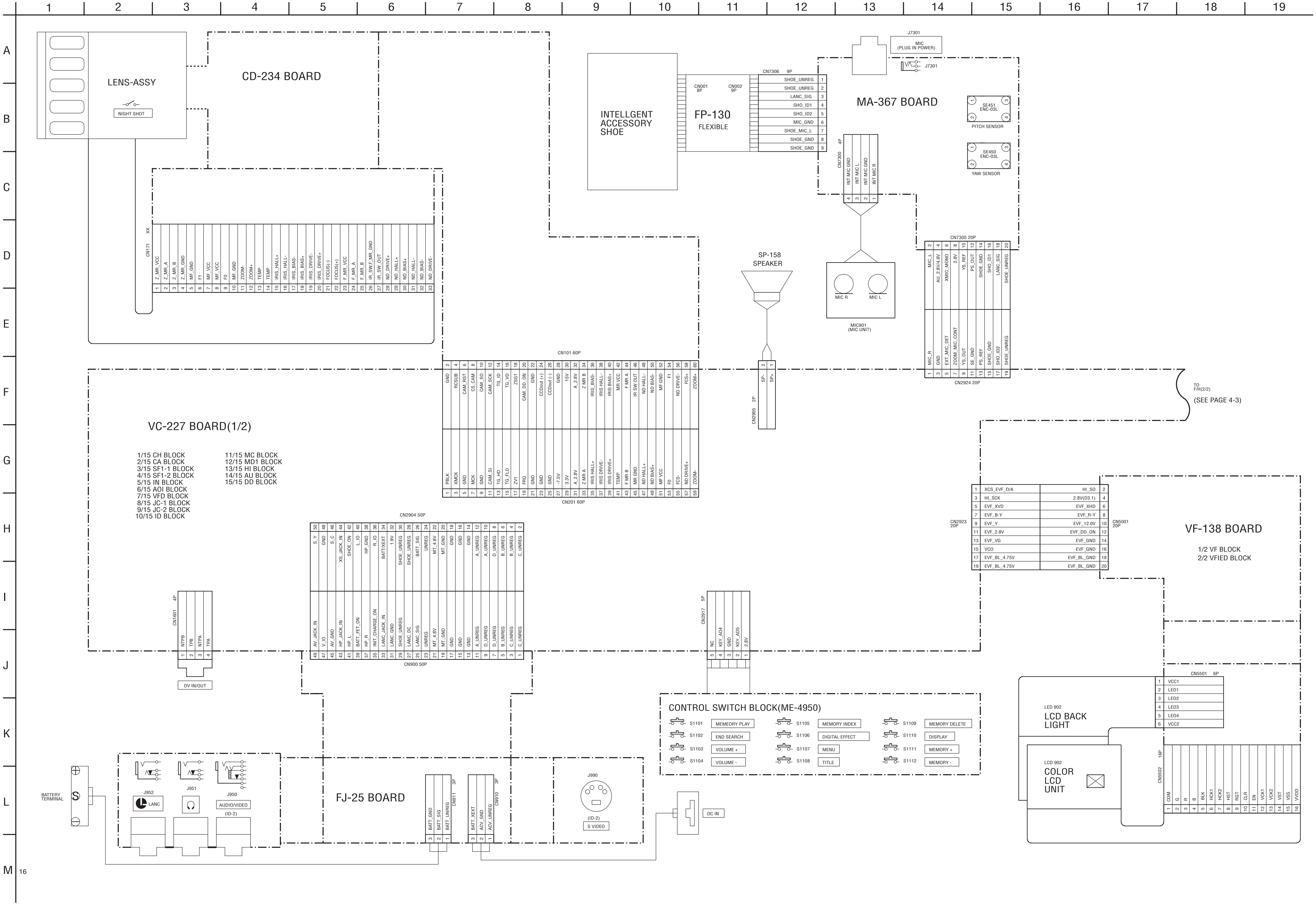
POWER BLOCK DIAGRAM-2

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

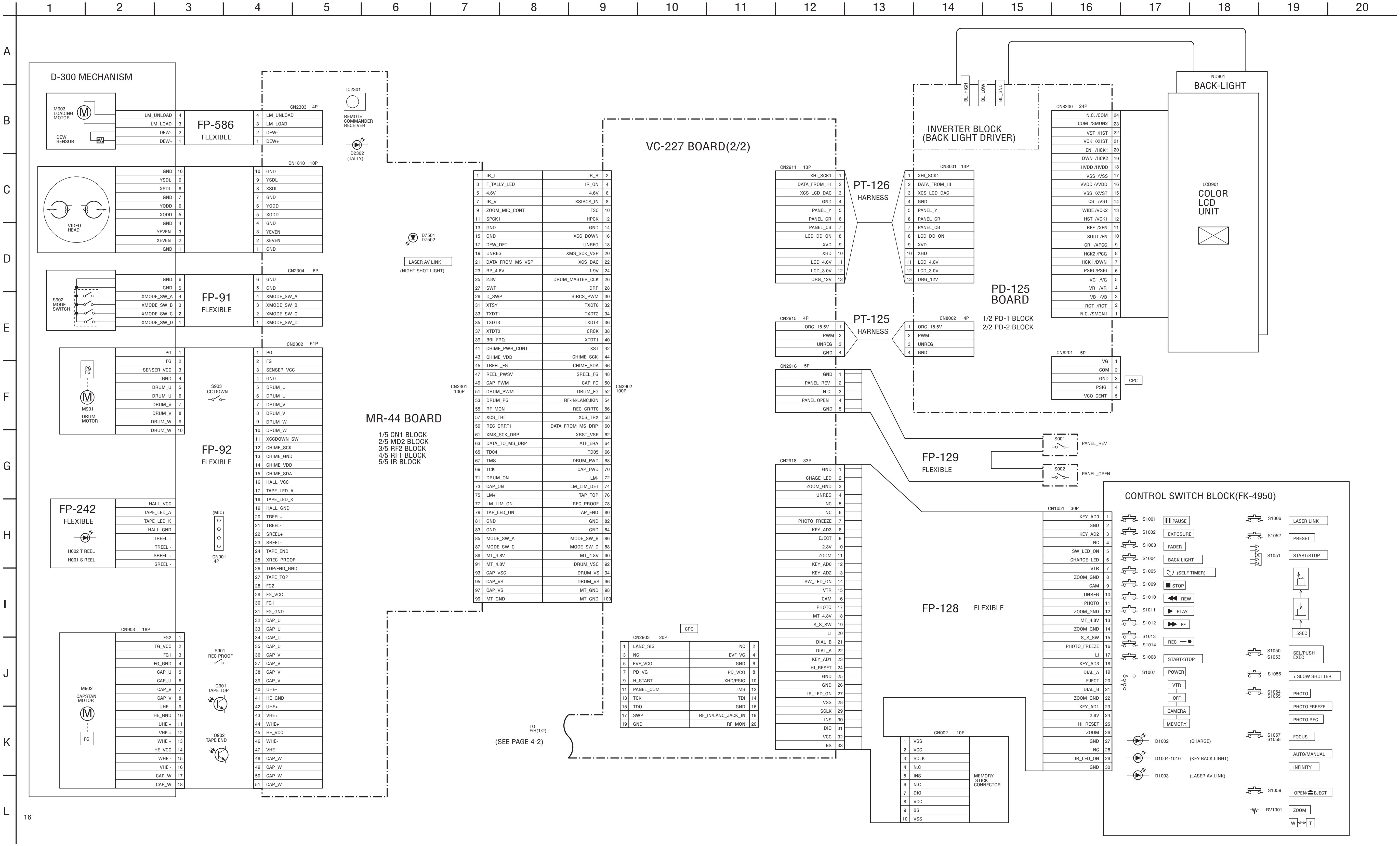

VC-227 BOARD
(2/2)
IC2204 (4-38) HI CONTROL
IC2200 (4-37) REG
IC2201 (4-37)
IC2203 (4-37) LANC I/O
RESET
BATTER IN DETECT
BATT SENS
ACV SENS
XRESET
VDD
BATT IN
XLANC ON
SHOE ON
IB SO
IB SI
EVF DD ON
INIT CHARGE ON
VTR DD ON
CAM DD ON
BATT FET ON
LCD DD ON
BATT/XEXT
XVTR MODE SW
XCAM+STBY SW
XPHOTO STBY SW
CHIME PWR CONT
SHOE ON
BATT SIG
INIT CHARGE ON
VTR DD ON
BATT FET ON
BATT XEXT
BATT UNREG
MT 4.8V
UNREG
LANC DC
UNREG
BACK UP LI
LCD 4.6V
LCD 2.8V
LCD EVF 12V
LCD 15.5V
LCD EVF 12V
EVF 2.8V
Q2014 REG
IC2001 (4-39) (ABC) AUDIO I/O
IC2002 (4-40) AUDIO ADC&DAC
IC2404 EEPROM (4-36)
IC2401 MECHA CONTROL (4-35)
LCD PWM
TO POWER BLOCK DIAGRAM (1/2)
(SEE PAGE 3-8)
IC1200 (BBI) AGC,AFC A/D CONV. (4-22)
IC1402 (AOI) VIDEO LINE OUT AMP (4-23)
IC1600 (SFD) DCT/IDCT ESTIMATION QUANTIZE VLC/VLD FLAMING DEFRAMING (4-28)
IC1601 (TFD) ECC/PTG DESHUFFLING ENCOD/DECODE CONCEAL TBC (4-29)
IC1602 (LIP) DV INTERFACE (4-29)
IC1501 (VFD) BLOCKING SHUFFLING STILL FILTER MEMORY FEATURE DIGITAL EFFECT TEST SIG ENCODER (4-25)
IC1502 CHARACTER GENERATOR (4-26)
EVER 3.0V
IC303 EVR (4-34)
IC302 CAMERA CONTROL (4-34)
IC301 EEPROM (4-33)
IC252 2.5V REG (4-16)
IC251 CAMERA SIGNAL PROCESS RC PROCESS (4-15)
IC203 16M SDRAM (4-13)
IC201 A/D CONV. (4-13)
Q301
MF LED
CAP VS
CSP VSC
DRUM VS
DRUM VSC
3.3V
15V
-7.5V
A 3.1V
IC501 PITCH,YAW SENSOR AMP (4-33)
IC404 FOCUS/ZOOM MOTOR CONTROL (4-31)
IC401 FOCUS/ZOOM MOTOR DRIVE SHUTTER DRIVE ND FILTER DRIVE (4-31)
IC411 ND FILTER PRE DRIVE ND HALL AMP (4-32)
IC412 IC413 IRIS DRIVE IRIS HALL AMP (4-31)
VCC
MA-367 BOARD (4-73)
IC7301 MIC AMP
YAW,PITCH SENSOR
INTELLIGENT ACCESSORY SHOE
SHOE UNREG
CN2924
CN7305
CN7306
FP-128 (FLEXIBLE) (4-69)
CN002
MEMORY STICK
CN2918 VCC
CN001
CN1051
CONTROL SWITCH BLOCK(FK-4950) (4-67)
CHARGE LED
ZOOM VR IR LED
KEY ILLUMINATION LED
S1052 RESET
S1007 POWER
VTR
OFF
CAMERA
MEMORY
BT1050 LITHIUM BATTERY
PD-125 BOARD
Q8003
PANEL 12V
L8202
CN8200 HVDD VVDD
LCD901 2.5INCH LCD UNIT
P 12V
IC8200 EVR (4-79)
IC8201 TIMING GENERATOR (4-79)
IC8001 RGB DRIVE (4-78)
Q8007
Q8001
Q8000
INVERTER (BACK LIGHT DRIVE)
LCD DD ON
LCD 4.6V
LCD 2.8V
LCD EVF 12V
LCD 15.5V
UNREG
PWM
CN2911
CN8001
CN2915
CN8002
VF-138 BOARD
Q5050 Q5052(1/2)
Q5051, Q5052 (2/2)
Q5053
L5001
L5000
EVF 12V
EVF 2.8V
EVF DD ON
VV DD RGT
CN5502
LCD902 LCD UNIT
IC5000 LCD DRIVE (4-80)
IC5001 EVR (4-82)
IC5002 TIMING GENERATOR (4-82)
LED902 BACK LIGHT
CN5501
VCC1,VCC2
RP 4.6V
CN2923
CN5001
MR-44 BOARD
CN2902
CN2301
CHIME PWR CONT
Q2304
CHIME VDD
TAPE LED(A)
R2586
IR LED D7501,7502
IC2504 CAPSTAN MOTOR DRIVE (4-54)
IC2505 DRUM MOTOR DRIVE (4-54)
IC2503 DRUM/LOADING MOTOR PREDRIVE (4-53)
CAP VS
CAP VSC
DRUM VS
DRUM VSC
HE VCC
FG VCC
L1803,FB1801
IC7500 EVR (4-59)
IC7501 IR TRANS MITTER (4-60)
IC2301 REMOTE COMMANDER RECEIVER (4-51)
IC1816 (TRW) REC/PB AMP (4-58)
IC1814 (TRF) EQ. A/D CONV. PLL (4-57)
IC1900 (TRX) CLOCK CONV. IC1814 CONT. VITERVI TIMING GEN. SYNC DETECT ID DETECT (4-55)
CN2302
FP-92 (FLEXIBLE) 4PIN CONNECTOR
FP-242 (FLEXIBLE) TREEL/SREEL SENSOR
M902 CAPSTAN MOTOR
D MECHA DECK (D-300) (4-52)
CD-234 BOARD
CAM DD ON
Q102,103
IC101 CCD IMAGER (4-11)
IC103 AMP
IC104 CDS,AGC (4-11)
IC102 TIMING GENERATOR (4-11)
MF VCC
MR VCC
F MR VCC
Z MR VCC
CN171
CN201
CN101
LENS ASSY
FOCUS RING
FOCUS MR
ZOOM MR
16

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM-1


LENS-ASSY
NIGHT SHOT
CD-234 BOARD
CN171 XX
INTELLGENT ACCESSORY SHOE
FP-130 FLEXIBLE
CN001 8P
CN002 9P
CN7306 9P
SHOE_UNREG
LANC_SIG
SHO_ID1
SHO_ID2
MIC_GND
SHOE_MIC_L
SHOE_GND
J7301
MIC (PLUG IN POWER)
MA-367 BOARD
SE451 ENC-03L
PITCH SENSOR
SE450 ENC-03L
YAW SENSOR
CN7300 4P
INT MIC GND
INT MIC L
INT MIC R
SP-158 SPEAKER
MIC901 (MIC UNIT)
MIC R
MIC L
CN7305 20P
CN2924 20P
CN101 60P
CN201 60P
CN2905 2P
SP-
SP+
TO F/H(2/2)
(SEE PAGE 4-3)
VC-227 BOARD(1/2)
1/15 CH BLOCK
2/15 CA BLOCK
3/15 SF1-1 BLOCK
4/15 SF1-2 BLOCK
5/15 IN BLOCK
6/15 AOI BLOCK
7/15 VFD BLOCK
8/15 JC-1 BLOCK
9/15 JC-2 BLOCK
10/15 ID BLOCK
11/15 MC BLOCK
12/15 MD1 BLOCK
13/15 HI BLOCK
14/15 AU BLOCK
15/15 DD BLOCK
CN2904 50P
CN900 50P
CN1601 4P
NTPB
TPB
NTPA
TPA
DV IN/OUT
CN2917 5P
NC
KEY_AD4
GND
KEY_AD5
2.8V
CN2923 20P
CN5001 20P
VF-138 BOARD
1/2 VF BLOCK
2/2 VFIED BLOCK
CONTROL SWITCH BLOCK(ME-4950)
S1101 MEMEORY PLAY
S1102 END SEARCH
S1103 VOLUME +
S1104 VOLUME -
S1105 MEMORY INDEX
S1106 DIGITAL EFFECT
S1107 MENU
S1108 TITLE
S1109 MEMORY DELETE
S1110 DISPLAY
S1111 MEMORY +
S1112 MEMORY -
LCD 902 LCD BACK LIGHT
CN5501 6P
VCC1
LED1
LED2
LED3
LED4
VCC2
LCD 902 COLOR LCD UNIT
CN5502 16P
BATTERY TERMINAL
J952 LANC
J951
J950 AUDIO/VIDEO (ID-2)
FJ-25 BOARD
CN911 3P
BATT_GND
BATT_SIG
BATT_UNREG
CN910 3P
BATT_XEXT
ACV_GND
ACV_UNREG
J990 (ID-2) S VIDEO
DC IN
16

FRAME SCHEMATIC DIAGRAM-2

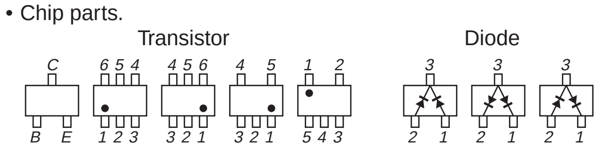

D-300 MECHANISM
M903 LOADING MOTOR
DEW SENSOR
VIDEO HEAD
S902 MODE SWITCH
M901 DRUM MOTOR
FP-242 FLEXIBLE
H002 T REEL
H001 S REEL
M902 CAPSTAN MOTOR
FP-586 FLEXIBLE
FP-91 FLEXIBLE
FP-92 FLEXIBLE
S903 CC DOWN
(MIC)
CN901 4P
S901 REC PROOF
Q901 TAPE TOP
Q902 TAPE END
CN903 18P
CN2303 4P
CN1810 10P
CN2304 6P
CN2302 51P
IC2301 REMOTE COMMANDER RECEIVER
D2302 (TALLY)
D7501 D7502
LASER AV LINK
(NIGHT SHOT LIGHT)
MR-44 BOARD
1/5 CN1 BLOCK
2/5 MD2 BLOCK
3/5 RF2 BLOCK
4/5 RF1 BLOCK
5/5 IR BLOCK
CN2301 100P
CN2902 100P
TO F/H(1/2)
(SEE PAGE 4-2)
VC-227 BOARD(2/2)
CPC
CN2903 20P
CN2911 13P
CN2915 4P
CN2916 5P
CN2918 33P
PT-126 HARNESS
PT-125 HARNESS
FP-129 FLEXIBLE
FP-128 FLEXIBLE
CN002 10P
MEMORY STICK CONNECTOR
INVERTER BLOCK (BACK LIGHT DRIVER)
BL_HIGH
BL_LOW
BL_GND
ND901 BACK-LIGHT
CN8200 24P
CN8001 13P
CN8002 4P
CN8201 5P
LCD901 COLOR LCD UNIT
PD-125 BOARD
1/2 PD-1 BLOCK
2/2 PD-2 BLOCK
S001 PANEL_REV
S002 PANEL_OPEN
CONTROL SWITCH BLOCK(FK-4950)
CN1051 30P
S1001 PAUSE
S1002 EXPOSURE
S1003 FADER
S1004 BACK LIGHT
S1005 (SELF TIMER)
S1009 STOP
S1010 REW
S1011 PLAY
S1012 FF
S1013 S1014 REC
S1008 START/STOP
S1007 POWER VTR OFF CAMERA MEMORY
S1006 LASER LINK
S1052 PRESET
S1051 START/STOP
SSEC
S1050 S1053 SEL/PUSH EXEC
S1056 + SLOW SHUTTER
S1054 S1055 PHOTO
PHOTO FREEZE
PHOTO REC
S1057 S1058 FOCUS
AUTO/MANUAL
INFINITY
S1059 OPEN/EJECT
RV1001 ZOOM
W T
D1002 (CHARGE)
D1004-1010 (KEY BACK LIGHT)
D1003 (LASER AV LINK)
16

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ░░░: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.



(For schematic diagrams)

- All capacitors are in mF unless otherwise noted. pF : m mF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
  kW=1000W, MW=1000kW.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

Kinds of capacitor

Temperature characteristics

External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- —▭— : non flammable resistor
- —∿— : fusible resistor
- ▭ : panel designation
- ━━ : B+ Line *
- ╍╍ : B– Line *
- ⇨ : IN/OUT direction of (+,–) B LINE. *
- ▭ : adjustment for repair. *
- Circled numbers refer to waveforms. *

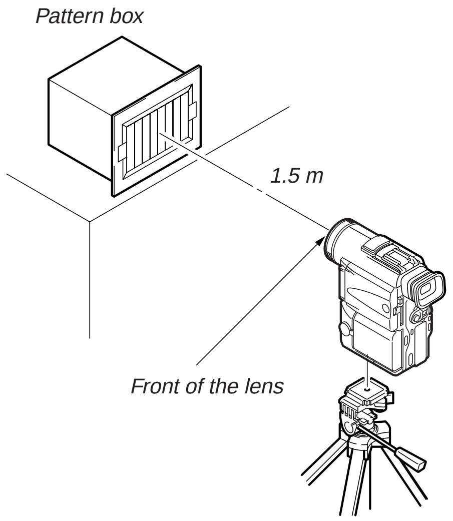
* Indicated by the color red.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

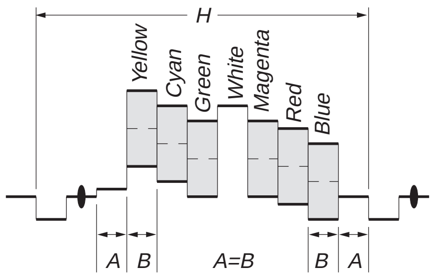


Fig. a (Video output terminal output waveform)

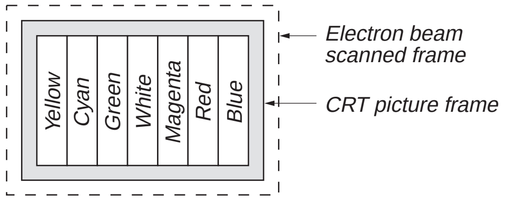
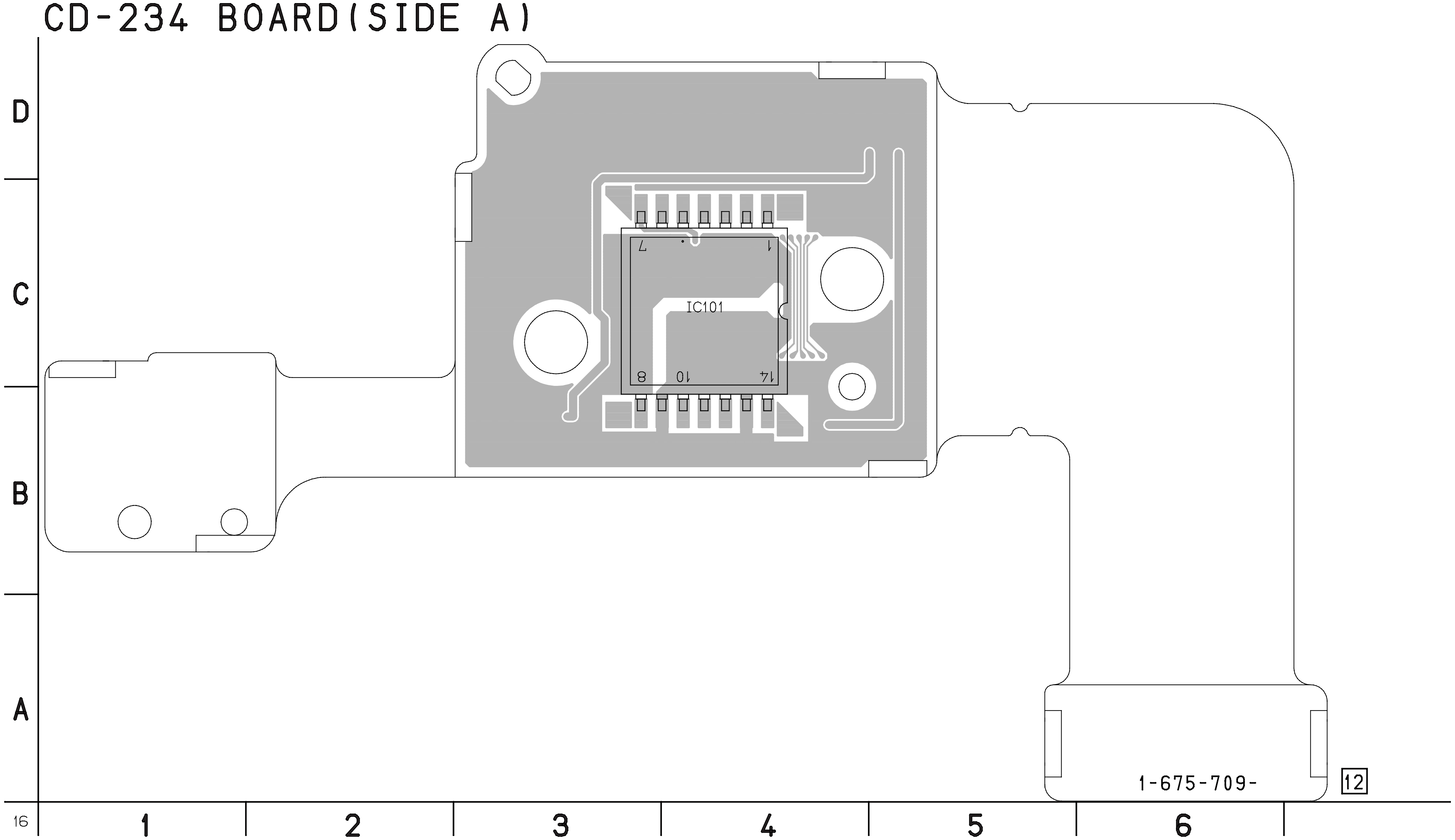


Fig.b (Picture on monitor TV)

When indicating parts by reference number, pleas include the board name.

CD-234 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. CD-234 Board; 4,000 Series —

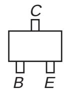

CD-234 BOARD(SIDE A)
D
C
B
A
IC101
7
1
8
10
14
1-675-709-
12
16
1
2
3
4
5
6

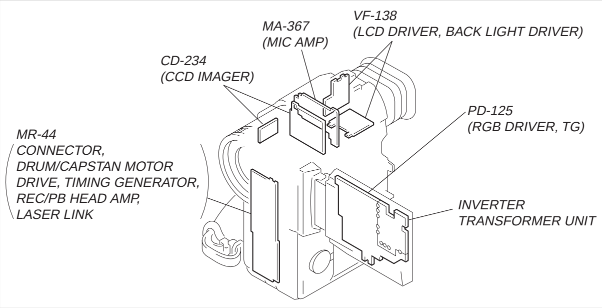
Do not remove the CCD imager become position alignment between the CCD imager and the CD-234 board is extremely difficult.
These two parts are supplied together .

For printed wiring board

- Refer to page 4-92 for location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

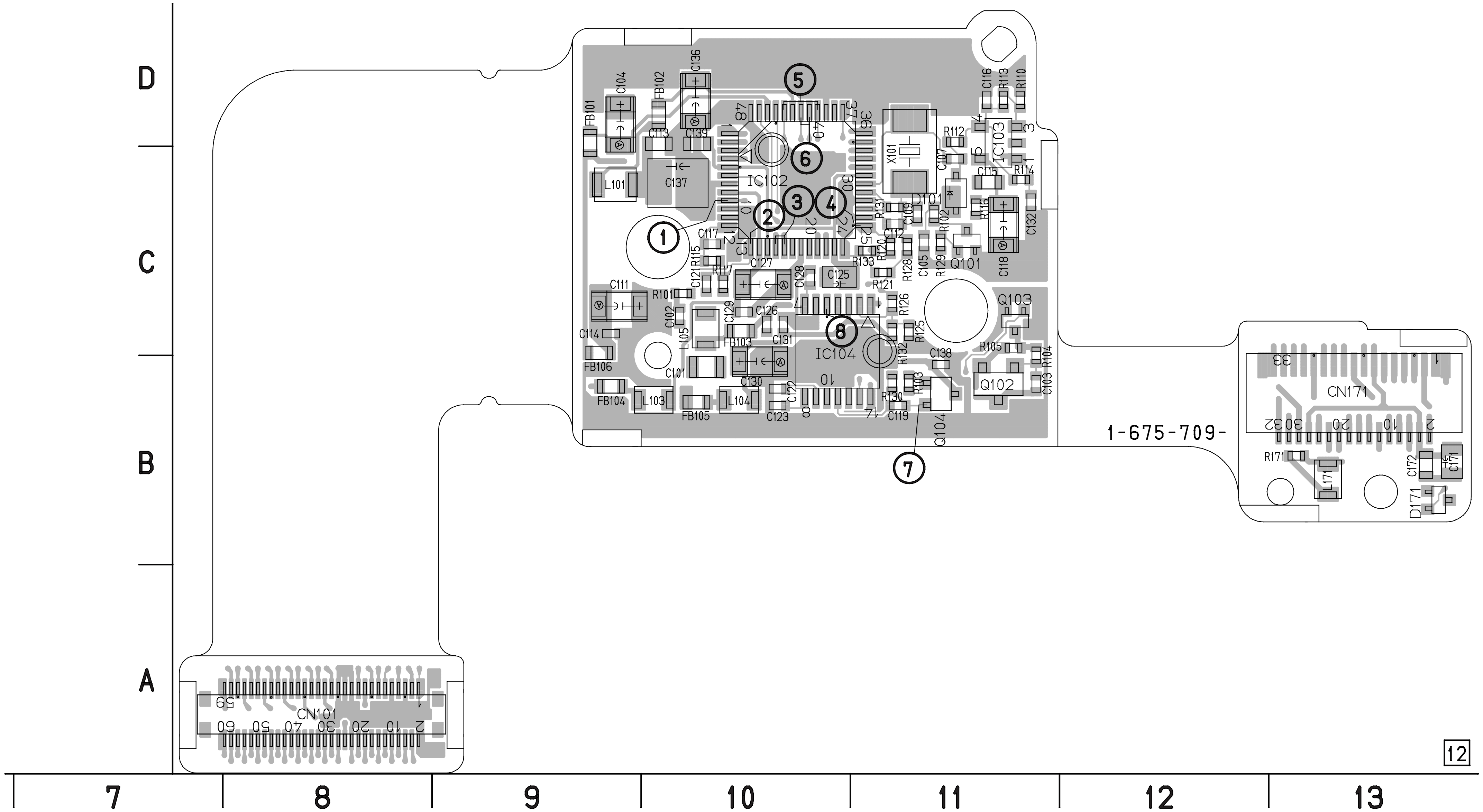
Transistor



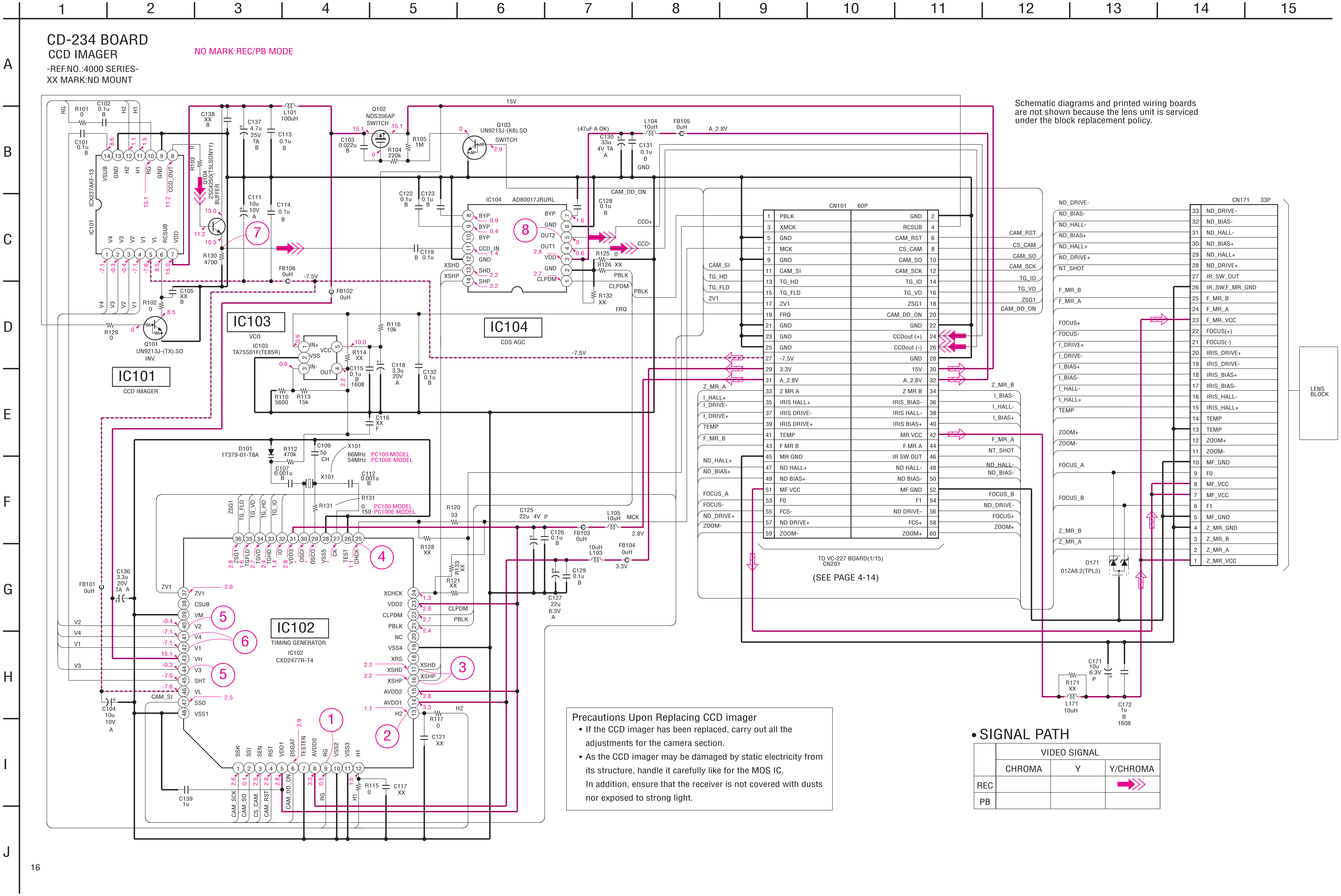

VF-138
(LCD DRIVER, BACK LIGHT DRIVER)
MA-367
(MIC AMP)
CD-234
(CCD IMAGER)
PD-125
(RGB DRIVER, TG)
MR-44
CONNECTOR,
DRUM/CAPSTAN MOTOR
DRIVE, TIMING GENERATOR,
REC/PB HEAD AMP,
LASER LINK
INVERTER
TRANSFORMER UNIT

There are few cases that the part printed on this diagram isn't mounted in this model.

CD-234 BOARD(SIDE B)


D
C
B
A
7
8
9
10
11
12
13
①
②
③
④
⑤
⑥
⑦
⑧
IC102
IC103
IC104
CN101
CN171
X101
D101
D171
Q101
Q102
Q103
Q104
L101
L103
L104
L105
L171
FB101
FB102
FB103
FB104
FB105
FB106
C101
C102
C103
C104
C105
C107
C109
C111
C112
C113
C114
C115
C116
C117
C118
C119
C121
C122
C123
C125
C126
C127
C128
C129
C130
C131
C132
C136
C137
C138
C139
C171
C172
R101
R102
R103
R104
R105
R110
R112
R113
R114
R115
R116
R117
R120
R121
R125
R126
R128
R129
R130
R131
R132
R133
R171
1-675-709-
12

For Schematic Diagram
- Refer to page 4-7 for printed wiring board.
- Refer to page 4-87 for waveforms.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
CD-234 BOARD
CCD IMAGER
-REF.NO.:4000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
IC101
CCD IMAGER
ICX237AKF-13
Q101
UN9213J-(TX).SO
INV.
Q102
NDS356AP
SWITCH
Q103
UN9213J-(K8).SO
SWITCH
Q104
2SC4250(T5LSONY1)
BUFFER
IC103
VCO
IC103
TA75S01F(TE85R)
IC104
CDS AGC
IC104 AD80017JRURL
IC102
TIMING GENERATOR
IC102
CXD2477R-T4
D101
1T379-01-T8A
X101
66MHz :PC100 MODEL
54MHz :PC100E MODEL
R131
0 :PC100 MODEL
150 :PC100E MODEL
15V
A_2.8V
-7.5V
CN101 60P
CN171 33P
LENS BLOCK
D171
01ZA8.2(TPL3)
TO VC-227 BOARD(1/15)
CN201
(SEE PAGE 4-14)
16

Schematic diagrams and printed wiring boards are not shown because the lens unit is serviced under the block replacement policy.

Precautions Upon Replacing CCD imager
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

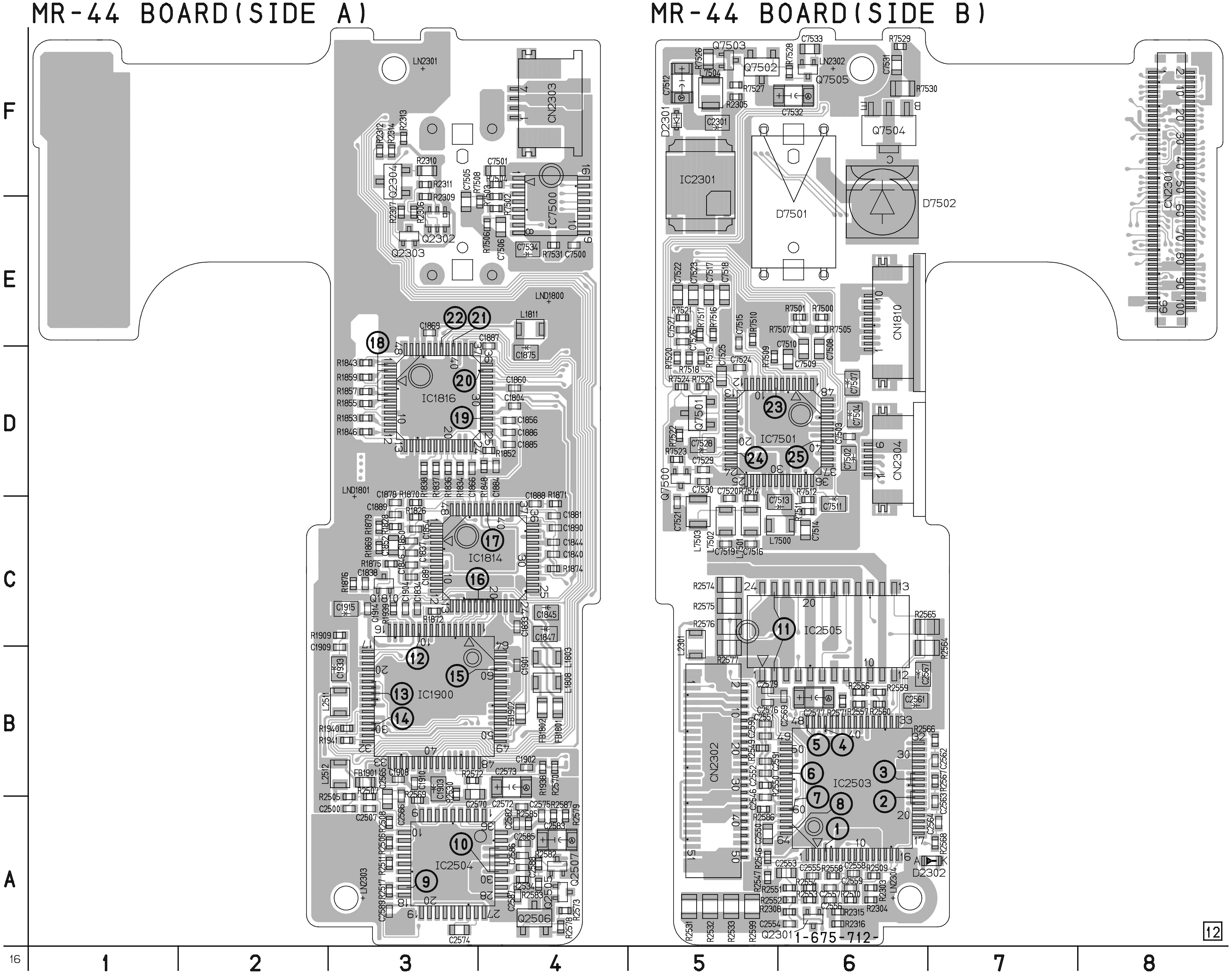
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			⇒
PB			

Schematic diagram and printed wiring board of the VC-227 board are not shown.
Pages from 4-13 to 4-46 are not shown.

MR-44 (CONNECTOR, DRUM/CAPSTAN MOTOR DRIVE, TIMING GENERATOR, REC/PB HEAD AMP, LASER LINK) PRINTED WIRING BOARD

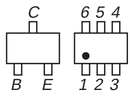
— Ref. No. MR-44 Board; 10,000 Series —


MR-44 BOARD(SIDE A)
MR-44 BOARD(SIDE B)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
16
12
IC1816
IC1814
IC1900
IC2504
IC7500
IC7501
IC2505
IC2503
IC2301
CN2303
CN2301
CN1810
CN2304
CN2302
D7501
D7502
D2302
Q2302
Q2303
Q2304
Q2301
Q2505
Q2506
Q2507
Q7500
Q7501
Q7502
Q7503
Q7504
Q7505
LND1800
LND1801
LN2301
LN2302
LN2303
LN2304
L7500
L1811
1-675-712-

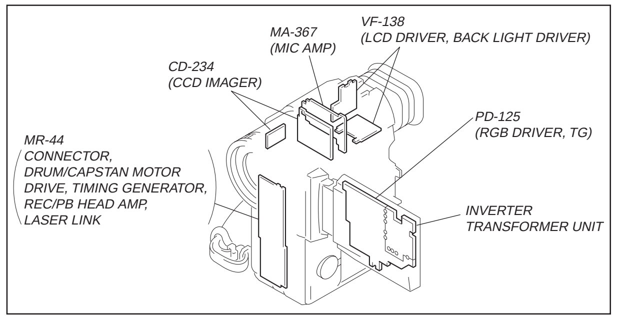
For printed wiring board

- Refer to page 4-94 for location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor



There are few cases that the part printed on this diagram isn't mounted in this model.


MA-367
(MIC AMP)
VF-138
(LCD DRIVER, BACK LIGHT DRIVER)
CD-234
(CCD IMAGER)
PD-125
(RGB DRIVER, TG)
MR-44
CONNECTOR,
DRUM/CAPSTAN MOTOR
DRIVE, TIMING GENERATOR,
REC/PB HEAD AMP,
LASER LINK
INVERTER
TRANSFORMER UNIT

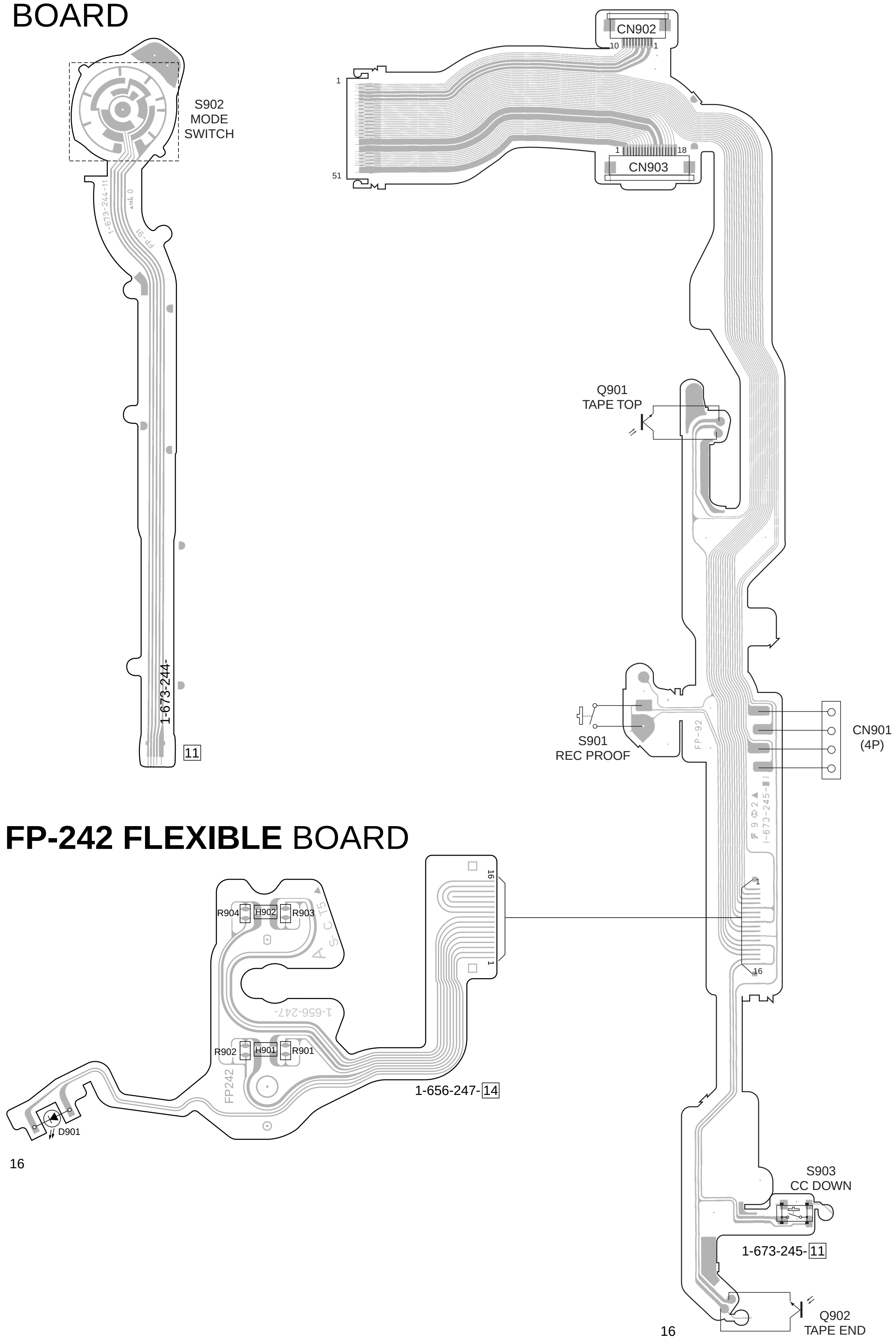
FP-91 (MODE), FP-92 (TOP/END SENSOR, TAPE LED), FP-242 (S/T REEL SENSOR) PRINTED WIRING BOARDS

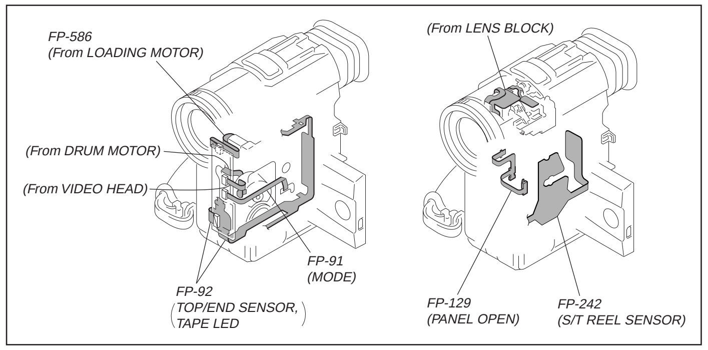
— Ref. No. FP-91, 92, 242 Flexible Boards; 10,000 Series —

FP-91 FLEXIBLE BOARD

FP-92 FLEXIBLE BOARD

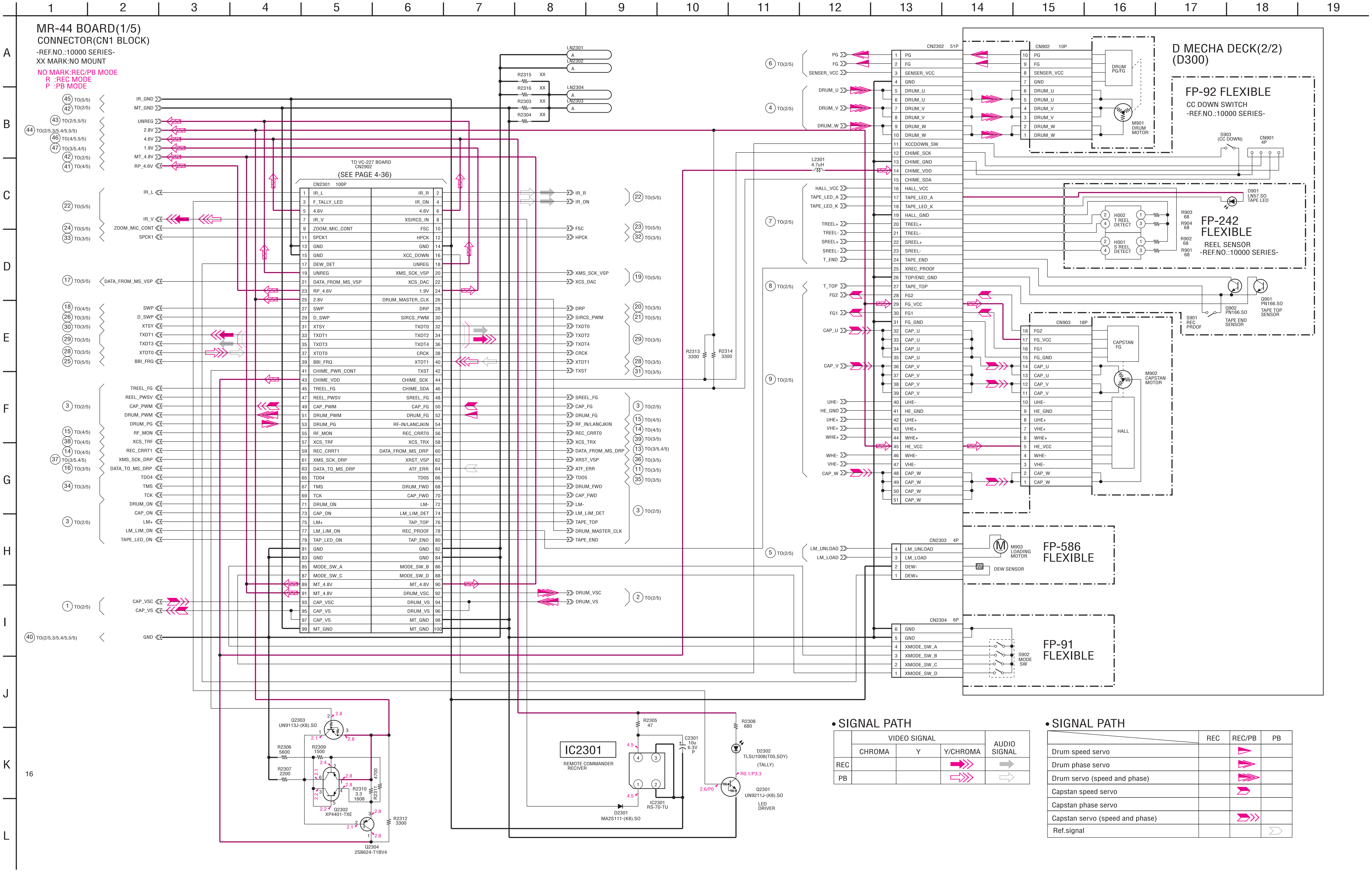
FP-242 FLEXIBLE BOARD


S902
MODE
SWITCH
1-673-244-
11
CN902
10
1
1
51
1
18
CN903
Q901
TAPE TOP
S901
REC PROOF
FP-92
CN901
(4P)
1-673-245-
1
16
S903
CC DOWN
1-673-245-11
Q902
TAPE END
16
16
1
R904
H902
R903
1-656-247-
R902
H901
R901
FP242
1-656-247-14
D901
16


FP-586
(From LOADING MOTOR)
(From LENS BLOCK)
(From DRUM MOTOR)
(From VIDEO HEAD)
FP-91
(MODE)
FP-92
TOP/END SENSOR,
TAPE LED
FP-129
(PANEL OPEN)
FP-242
(S/T REEL SENSOR)

For Schematic Diagram

- Refer to page 4-47 for printed wiring board.


MR-44 BOARD(1/5)
CONNECTOR(CN1 BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
TO VC-227 BOARD CN2902
(SEE PAGE 4-36)
CN2301 100P
CN2302 51P
CN2303 4P
CN2304 6P
D MECHA DECK(2/2) (D300)
FP-92 FLEXIBLE
CC DOWN SWITCH
-REF.NO.:10000 SERIES-
S903 (CC DOWN)
CN901 4P
CN902 10P
DRUM PG/FG
M901 DRUM MOTOR
FP-242 FLEXIBLE
REEL SENSOR
-REF.NO.:10000 SERIES-
D901 LN57.SO TAPE LED
H002 T REEL DETECT
H001 S REEL DETECT
Q901 PN166.SO TAPE TOP SENSOR
Q902 PN166.SO TAPE END SENSOR
S901 REC PROOF
CN903 18P
CAPSTAN FG
M902 CAPSTAN MOTOR
HALL
FP-586 FLEXIBLE
M903 LOADING MOTOR
DEW SENSOR
FP-91 FLEXIBLE
S902 MODE SW
L2301 4.7uH
R2313 3300
R2314 3300
IC2301
REMOTE COMMANDER RECIVER
IC2301 RS-70-TU
D2301 MA2S111-(K8).SO
C2301 10u 6.3V P
R2305 47
R2308 680
D2302 TLSU1008(T05,SOY) (TALLY)
Q2301 UN9211J-(K8).SO
LED DRIVER
Q2303 UN9113J-(K8).SO
Q2302 XP4401-TXE
Q2304 2SB624-T1BV4
R2306 5600
R2307 2200
R2309 1500
R2310 3.3 1608
R2311 4700
R2312 3300
LN2301
LN2302
LN2303
LN2304
R2315 XX
R2316 XX
R2303 XX
R2304 XX
16

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡》	➡
PB			⇨》	⇨

• SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		⊳	
Drum servo (speed and phase)		⋙	
Capstan speed servo		➢	
Capstan phase servo			
Capstan servo (speed and phase)		➢》	
Ref.signal			▷

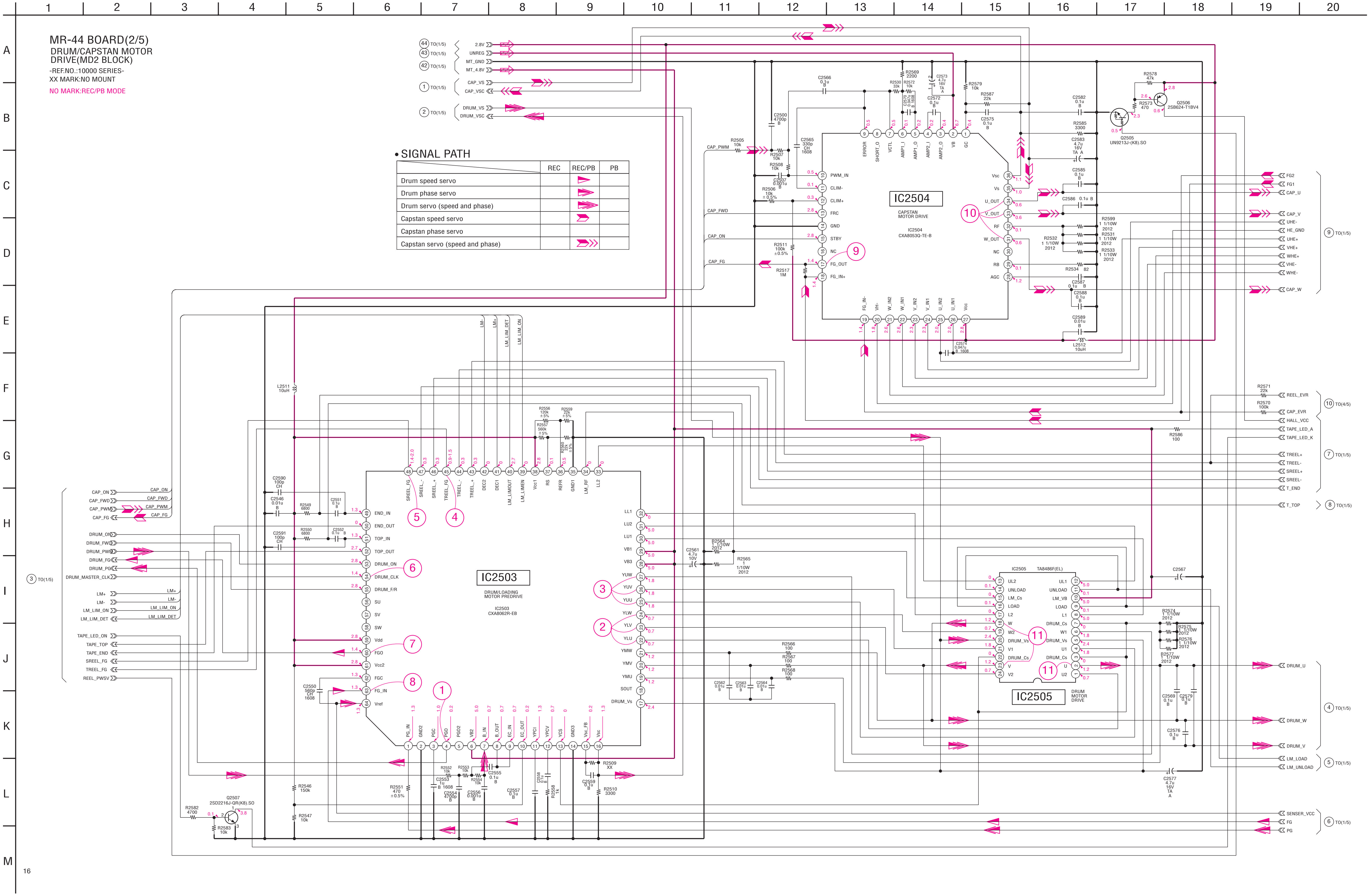
For Schematic Diagram

- Refer to page 4-47 for printed wiring board.
- Refer to page 4-89 for waveforms.

MR-44 BOARD(2/5)

DRUM/CAPSTAN MOTOR DRIVE(MD2 BLOCK)

-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
L
M
IC2504
CAPSTAN MOTOR DRIVE
IC2504 CXA8053Q-TE-B
IC2503
DRUM/LOADING MOTOR PREDRIVE
IC2503 CXA8062R-E8
IC2505
IC2505 TA8486F(EL)
DRUM MOTOR DRIVE
Q2505 UN9213J-(K8).SO
Q2506 2SB624-T18V4
Q2507 2SD2216J-QR(K8).SO
2.8V
UNREG
MT_GND
MT_4.8V
CAP_VS
CAP_VSC
DRUM_VS
DRUM_VSC
CAP_PWM
CAP_FWD
CAP_ON
CAP_FG
DRUM_ON
DRUM_FWD
DRUM_PWM
DRUM_FG
DRUM_PG
DRUM_MASTER_CLK
LM+
LM-
LM_LIM_ON
LM_LIM_DET
TAPE_LED_ON
TAPE_TOP
TAPE_END
SREEL_FG
TREEL_FG
REEL_PWSV
FG2
FG1
CAP_U
CAP_V
UHE-
HE_GND
UHE+
VHE+
WHE+
VHE-
WHE-
CAP_W
REEL_EVR
CAP_EVR
HALL_VCC
TAPE_LED_A
TAPE_LED_K
TREEL+
TREEL-
SREEL+
SREEL-
T_END
T_TOP
DRUM_U
DRUM_W
DRUM_V
LM_LOAD
LM_UNLOAD
SENSER_VCC
FG
PG
TO(1/5)
TO(4/5)
L2511 10uH
L2512 10uH
16

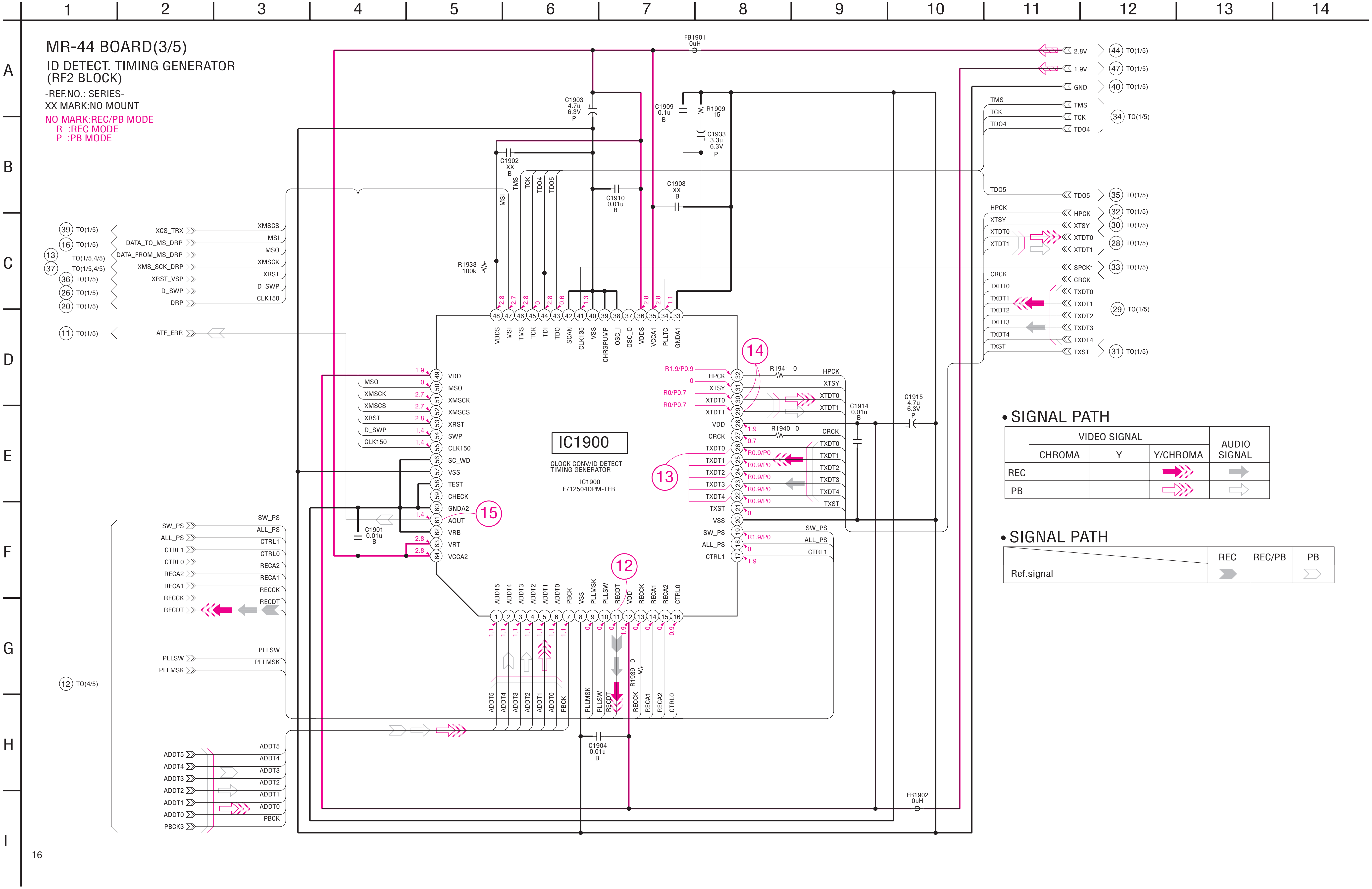
• SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶>	
Drum servo (speed and phase)		▶>>	
Capstan speed servo		▰	
Capstan phase servo			
Capstan servo (speed and phase)		▰>>	

DRUM/CAPSTAN MOTOR DRIVE

MR-44 (2/5)

For Schematic Diagram
- Refer to page 4-47 for printed wiring board.
- Refer to page 4-89 for waveforms.


1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
MR-44 BOARD(3/5)
ID DETECT. TIMING GENERATOR
(RF2 BLOCK)
-REF.NO.: SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1900
CLOCK CONV/ID DETECT
TIMING GENERATOR
IC1900
F712504DPM-TEB
FB1901 0uH
FB1902 0uH
C1901 0.01u B
C1902 XX B
C1903 4.7u 6.3V P
C1904 0.01u B
C1908 XX B
C1909 0.1u B
C1910 0.01u B
C1914 0.01u B
C1915 4.7u 6.3V P
C1933 3.3u 6.3V P
R1909 15
R1938 100k
R1939 0
R1940 0
R1941 0
2.8V (44) TO(1/5)
1.9V (47) TO(1/5)
GND (40) TO(1/5)
TMS TCK TDO4 (34) TO(1/5)
TDO5 (35) TO(1/5)
HPCK (32) TO(1/5)
XTSY (30) TO(1/5)
XTDT0 XTDT1 (28) TO(1/5)
SPCK1 (33) TO(1/5)
CRCK TXDT0 TXDT1 TXDT2 TXDT3 TXDT4 (29) TO(1/5)
TXST (31) TO(1/5)
(39) TO(1/5) XCS_TRX
(16) TO(1/5) DATA_TO_MS_DRP
(13) TO(1/5,4/5) DATA_FROM_MS_DRP
(37) TO(1/5,4/5) XMS_SCK_DRP
(36) TO(1/5) XRST_VSP
(26) TO(1/5) D_SWP
(20) TO(1/5) DRP
(11) TO(1/5) ATF_ERR
(12) TO(4/5)
XMSCS MSI MSO XMSCK XRST D_SWP CLK150
SW_PS ALL_PS CTRL1 CTRL0 RECA2 RECA1 RECCK RECDT
PLLSW PLLMSK
ADDT5 ADDT4 ADDT3 ADDT2 ADDT1 ADDT0 PBCK3 PBCK
VDDS MSI TMS TCK TDI TDO SCAN CLK135 VSS CHRGPUMP OSC_I OSC_O VDDS VCCA1 PLLTC GNDA1
VDD MSO XMSCK XMSCS XRST SWP CLK150 SC_WD VSS TEST CHECK GNDA2 AOUT VRB VRT VCCA2
HPCK XTSY XTDT0 XTDT1 VDD CRCK TXDT0 TXDT1 TXDT2 TXDT3 TXDT4 TXST VSS SW_PS ALL_PS CTRL1
ADDT5 ADDT4 ADDT3 ADDT2 ADDT1 ADDT0 PBCK VSS PLLMSK PLLSW RECDT VDD RECCK RECA1 RECA2 CTRL0
(12) (13) (14) (15)
R1.9/P0.9 R0/P0.7 R0.9/P0 R1.9/P0

• SIGNAL PATH

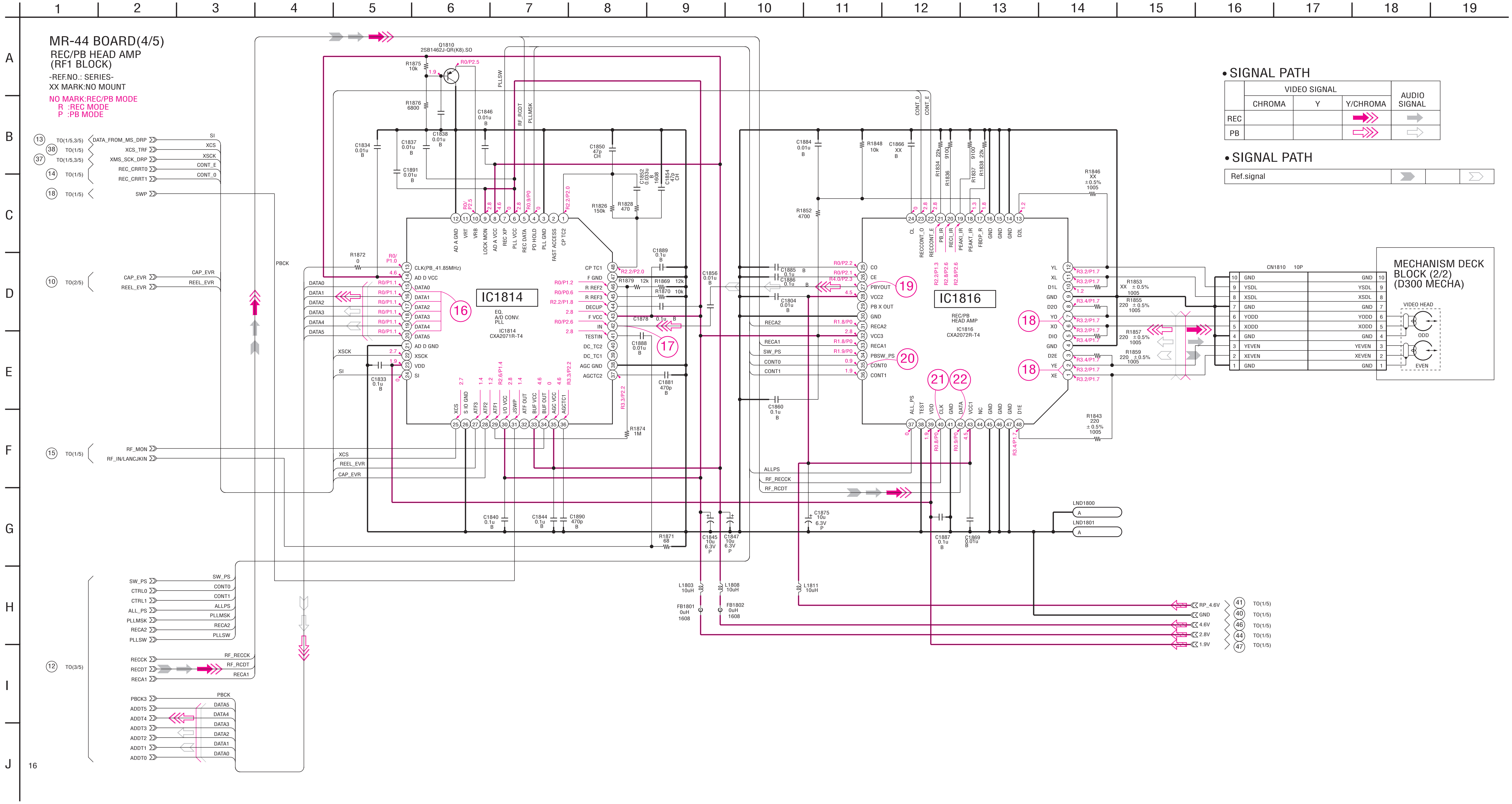
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

• SIGNAL PATH

	REC	REC/PB	PB
Ref.signal	➡		⇨

16

For Schematic Diagram
- Refer to page 4-47 for printed wiring board.
- Refer to page 4-90 for waveforms.


MR-44 BOARD(4/5)
REC/PB HEAD AMP
(RF1 BLOCK)
-REF.NO.: SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1814
EQ, A/D CONV. PLL
IC1814 CXA2071R-T4
IC1816
REC/PB HEAD AMP
IC1816 CXA2072R-T4
Q1810 2SB1462J-QR(K8).SO
CN1810 10P
MECHANISM DECK BLOCK (2/2) (D300 MECHA)
VIDEO HEAD
ODD
EVEN
LND1800
LND1801
TO(1/5,3/5) DATA_FROM_MS_DRP
TO(1/5) XCS_TRF
TO(1/5,3/5) XMS_SCK_DRP
TO(1/5) REC_CRRT0
REC_CRRT1
TO(1/5) SWP
TO(2/5) CAP_EVR
REEL_EVR
TO(1/5) RF_MON
RF_IN/LANCJKIN
SW_PS
CTRL0
CTRL1
ALL_PS
PLLMSK
RECA2
PLLSW
TO(3/5) RECCK
RECDT
RECA1
PBCK3
ADDT5
ADDT4
ADDT3
ADDT2
ADDT1
ADDT0
RP_4.6V
GND
4.6V
2.8V
1.9V
TO(1/5)
16
17
18
19
20
21
22

• SIGNAL PATH

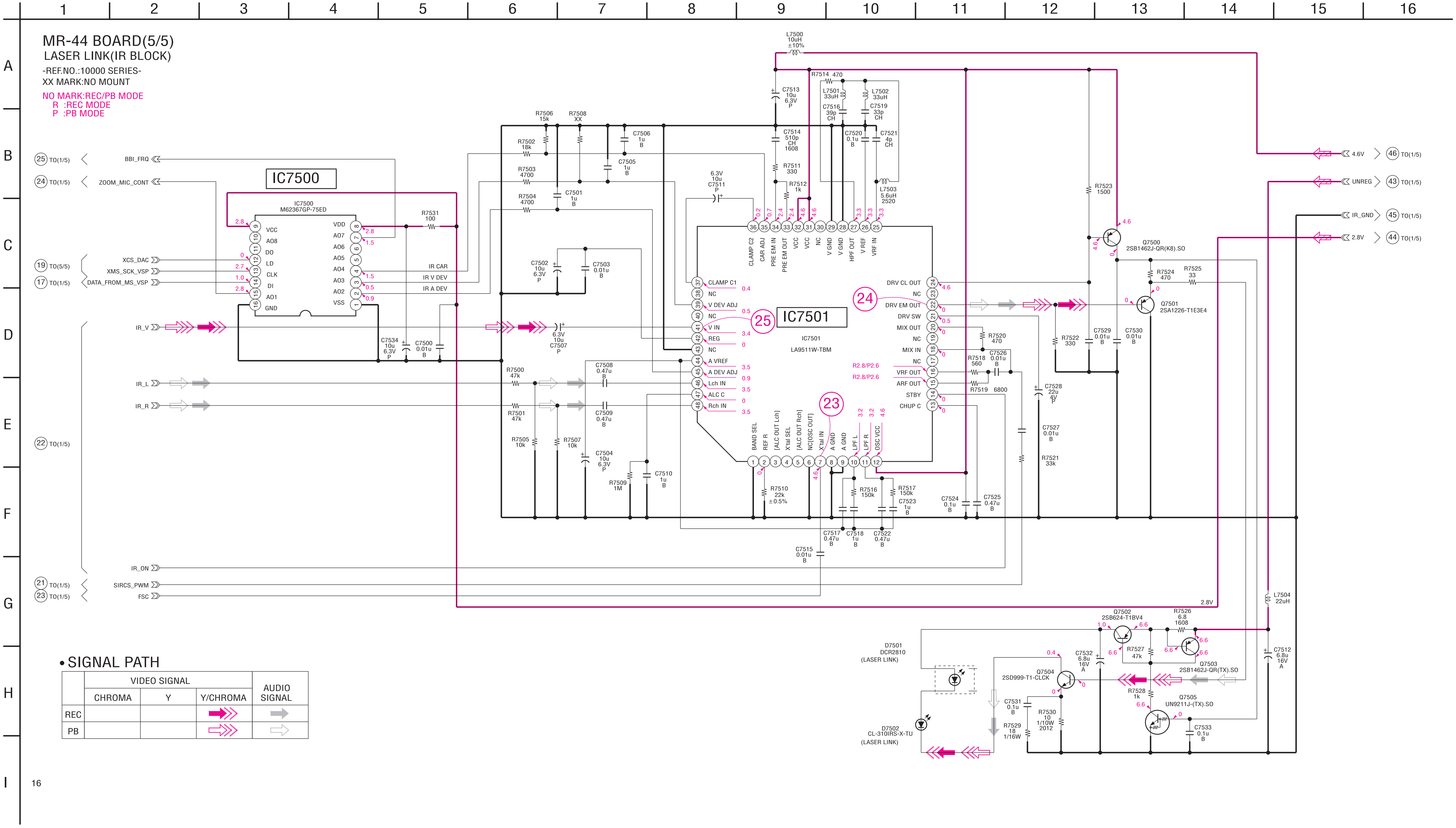
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

• SIGNAL PATH

Ref.signal	➡		⇨

For Schematic Diagram

- Refer to page 4-47 for printed wiring board.
- Refer to page 4-90 for waveforms.

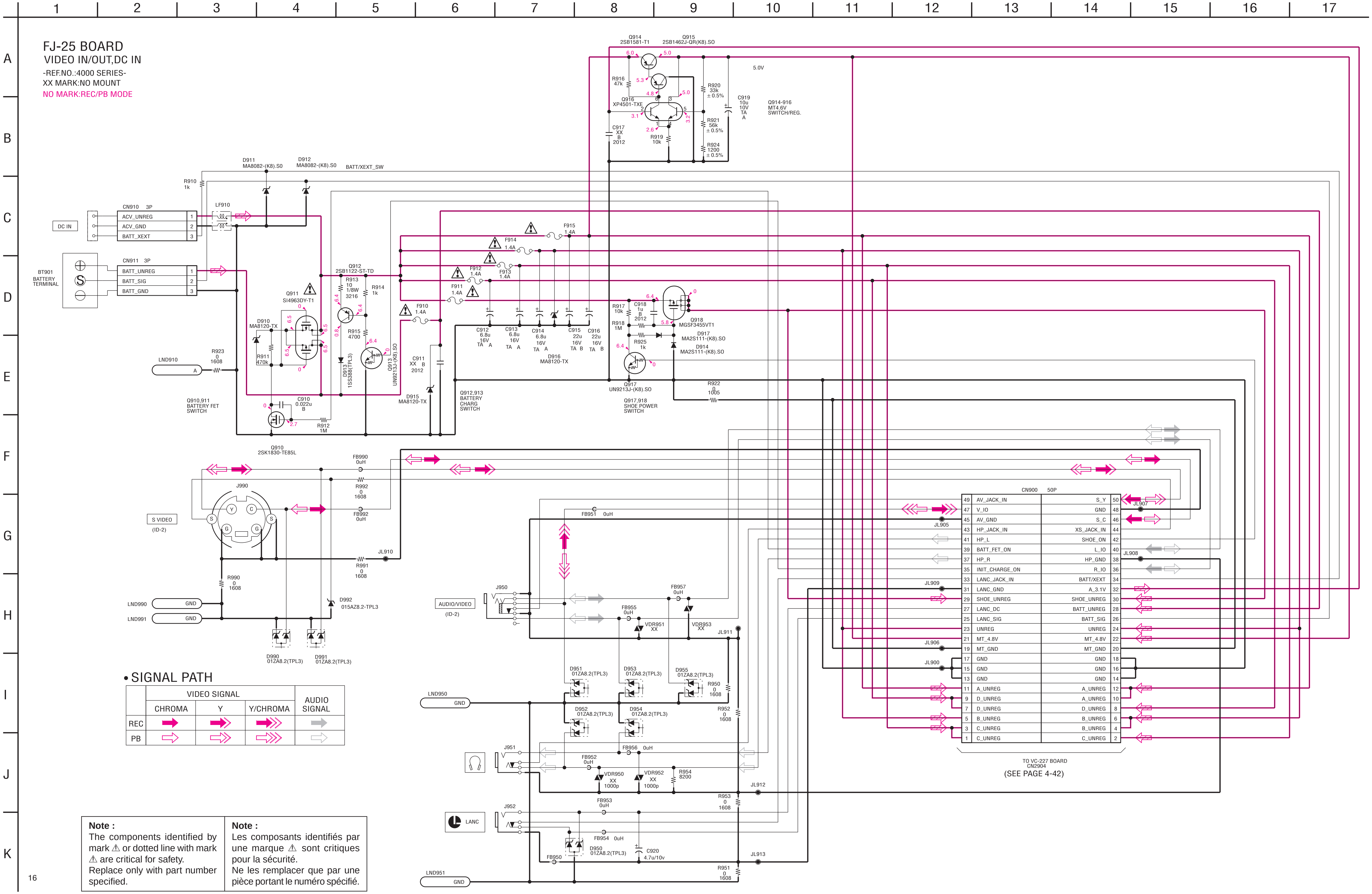

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I
MR-44 BOARD(5/5)
LASER LINK(IR BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC7500
IC7500 M62367GP-75ED
VCC AO8 DO LD CLK DI AO1 GND
VDD AO7 AO6 AO5 AO4 AO3 AO2 VSS
IC7501
IC7501 LA9511W-TBM
CLAMP C1 NC V DEV ADJ NC V IN REG NC A VREF A DEV ADJ Lch IN ALC C Rch IN
DRV CL OUT NC DRV EM OUT DRV SW MIX OUT NC MIX IN NC VRF OUT ARF OUT STBY CHUP C
CLAMP C2 CAR ADJ PRE EM IN PRE EM OUT VCC VCC NC V GND V GND HPF OUT V REF VRF IN
BAND SEL REF R [ALC OUT Lch] X'tal SEL [ALC OUT Rch] NC[OSC OUT] X'tal IN A GND A GND LPF L LPF R OSC VCC
23 24 25
R2.8/P2.6
(25) TO(1/5) BBI_FRQ
(24) TO(1/5) ZOOM_MIC_CONT
(19) TO(5/5) XCS_DAC
XMS_SCK_VSP
(17) TO(1/5) DATA_FROM_MS_VSP
IR_V
IR_L
IR_R
(22) TO(1/5)
IR_ON
(21) TO(1/5) SIRCS_PWM
(23) TO(1/5) FSC
IR CAR
IR V DEV
IR A DEV
4.6V (46) TO(1/5)
UNREG (43) TO(1/5)
IR_GND (45) TO(1/5)
2.8V (44) TO(1/5)
L7500 10uH ±10%
R7514 470
L7501 33uH
L7502 33uH
C7513 10u 6.3V P
C7516 39p CH
C7519 33p CH
C7514 510p CH 1608
C7520 0.1u B
C7521 4p CH
R7511 330
R7512 1k
L7503 5.6uH 2520
R7506 15k
R7508 XX
R7502 18k
R7503 4700
R7504 4700
C7506 1u B
C7505 1u B
C7501 1u B
C7511 6.3V 10u P
R7531 100
C7502 10u 6.3V P
C7503 0.01u B
C7534 10u 6.3V P
C7500 0.01u B
C7507 6.3V 10u P
R7500 47k
R7501 47k
C7508 0.47u B
C7509 0.47u B
R7505 10k
R7507 10k
C7504 10u 6.3V P
R7509 1M
C7510 1u B
R7510 22k ±0.5%
R7516 150k
R7517 150k
C7523 1u B
C7517 0.47u B
C7518 1u B
C7522 0.47u B
C7515 0.01u B
C7524 0.1u B
C7525 0.47u B
R7518 560
R7519 6800
R7520 470
C7526 0.01u B
C7528 22u 4V P
C7527 0.01u B
R7521 33k
R7522 330
C7529 0.01u B
C7530 0.01u B
R7523 1500
Q7500 2SB1462J-QR(K8).SO
R7524 470
R7525 33
Q7501 2SA1226-T1E3E4
2.8V
L7504 22uH
Q7502 2SB624-T1BV4
R7526 6.8 1608
R7527 47k
Q7503 2SB1462J-QR(TX).SO
C7512 6.8u 16V A
D7501 DCR2810 (LASER LINK)
C7532 6.8u 16V A
Q7504 2SD999-T1-CLCK
R7528 1k
Q7505 UN9211J-(TX).SO
C7531 0.1u B
R7530 10 1/10W 2012
R7529 18 1/16W
C7533 0.1u B
D7502 CL-310IRS-X-TU (LASER LINK)

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

16

For Schematic Diagram
- Refer to page 4-63 for printed wiring board.


FJ-25 BOARD
VIDEO IN/OUT,DC IN
-REF.NO.:4000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H I J K
DC IN
CN910 3P
ACV_UNREG
ACV_GND
BATT_XEXT
BT901 BATTERY TERMINAL
CN911 3P
BATT_UNREG
BATT_SIG
BATT_GND
LF910
R910 1k
D911 MA8082-(K8).SO
D912 MA8082-(K8).SO
BATT/XEXT_SW
Q911 SI4963DY-T1
Q912 2SB1122-ST-TD
R913 10 1/8W 3216
R914 1k
R915 4700
D910 MA8120-TX
R911 470k
R923 0 1608
LND910
D913 1SS388(TPL3)
Q913 UN9213J-(K8).SO
C910 0.022u B
R912 1M
Q910,911 BATTERY FET SWITCH
Q910 2SK1830-TE85L
F910 1.4A
F911 1.4A
F912 1.4A
F913 1.4A
F914 1.4A
F915 1.4A
C911 XX B 2012
D915 MA8120-TX
Q912,913 BATTERY CHARG SWITCH
C912 6.8u 16V TA A
C913 6.8u 16V TA A
C914 6.8u 16V TA A
C915 22u 16V TA B
C916 22u 16V TA B
D916 MA8120-TX
Q914 2SB1581-T1
Q915 2SB1462J-QR(K8).SO
R916 47k
Q916 XP4501-TXE
C917 XX B 2012
R919 10k
R920 33k ± 0.5%
R921 56k ± 0.5%
R924 1200 ± 0.5%
C919 10u 10V TA A
5.0V
Q914-916 MT4.6V SWITCH/REG.
R917 10k
C918 1u B 2012
R918 1M
R925 1k
Q918 MGSF3455VT1
D917 MA2S111-(K8).SO
D914 MA2S111-(K8).SO
Q917 UN9213J-(K8).SO
Q917,918 SHOE POWER SWITCH
R922 0 1005
S VIDEO (ID-2)
J990
FB990 0uH
R992 0 1608
FB992 0uH
R991 0 1608
JL910
R990 0 1608
D992 015AZ8.2-TPL3
LND990 GND
LND991 GND
D990 01ZA8.2(TPL3)
D991 01ZA8.2(TPL3)
AUDIO/VIDEO (ID-2)
J950
FB951 0uH
FB957 0uH
FB955 0uH
VDR951 XX
VDR953 XX
JL911
D951 01ZA8.2(TPL3)
D953 01ZA8.2(TPL3)
D955 01ZA8.2(TPL3)
D952 01ZA8.2(TPL3)
D954 01ZA8.2(TPL3)
R950 0 1608
R952 0 1608
LND950 GND
J951
FB952 0uH
FB956 0uH
VDR950 XX 1000p
VDR952 XX 1000p
R954 8200
JL912
LANC
J952
FB953 0uH
R953 0 1608
FB954 0uH
D950 01ZA8.2(TPL3)
C920 4.7u/10v
FB950
JL913
R951 0 1608
LND951 GND
CN900 50P
49 AV_JACK_IN S_Y 50
47 V_IO GND 48
45 AV_GND S_C 46
43 HP_JACK_IN XS_JACK_IN 44
41 HP_L SHOE_ON 42
39 BATT_FET_ON L_IO 40
37 HP_R HP_GND 38
35 INIT_CHARGE_ON R_IO 36
33 LANC_JACK_IN BATT/XEXT 34
31 LANC_GND A_3.1V 32
29 SHOE_UNREG SHOE_UNREG 30
27 LANC_DC BATT_UNREG 28
25 LANC_SIG BATT_SIG 26
23 UNREG UNREG 24
21 MT_4.8V MT_4.8V 22
19 MT_GND MT_GND 20
17 GND GND 18
15 GND GND 16
13 GND GND 14
11 A_UNREG A_UNREG 12
9 D_UNREG A_UNREG 10
7 D_UNREG D_UNREG 8
5 B_UNREG B_UNREG 6
3 C_UNREG B_UNREG 4
1 C_UNREG C_UNREG 2
JL905 JL907 JL908 JL909 JL906 JL900
TO VC-227 BOARD CN2904
(SEE PAGE 4-42)
16

• SIGNAL PATH

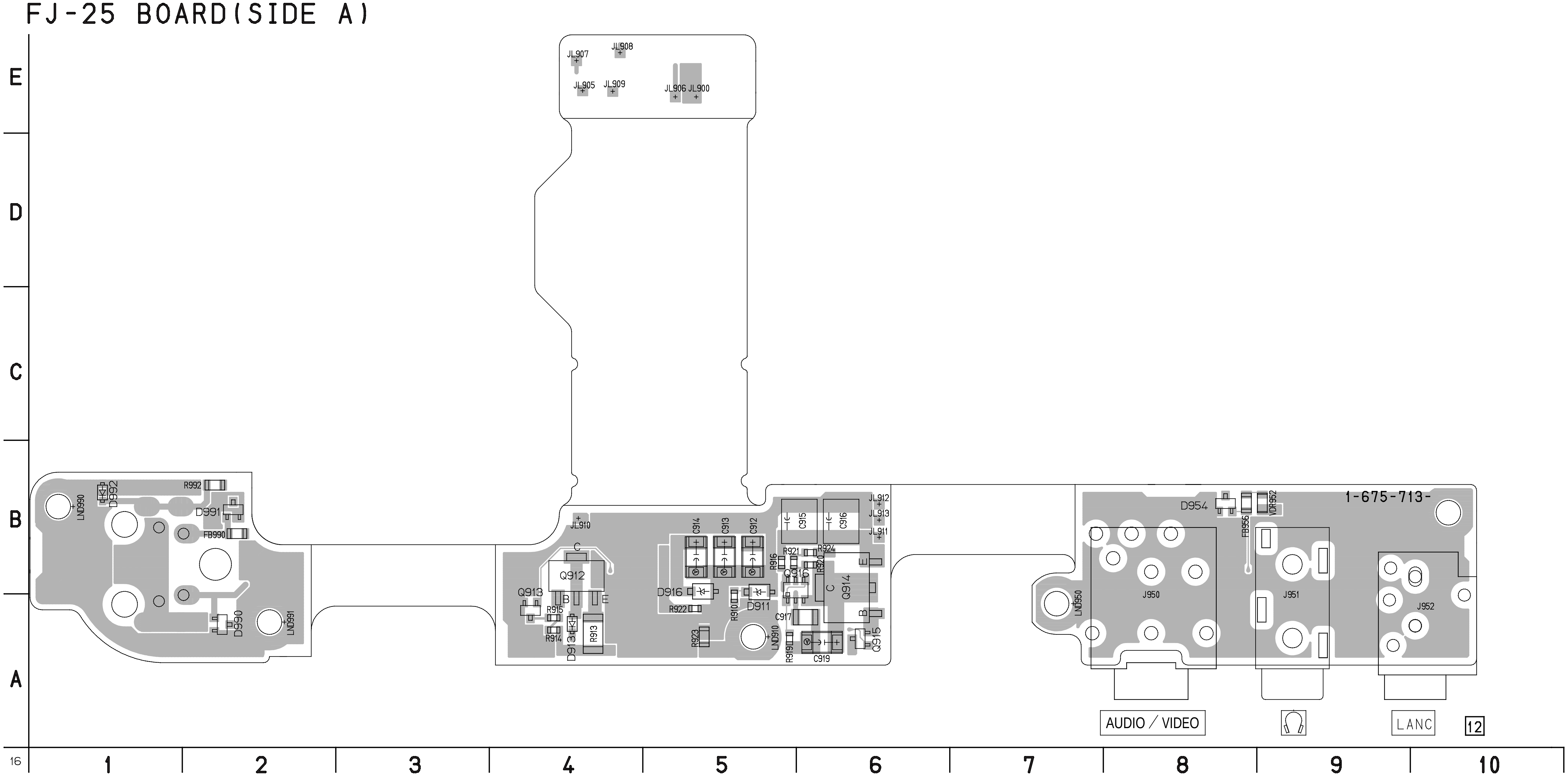
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	⇨	⇨⇨	⇨⇨⇨	⇨

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

FJ-25 (VIDEO IN/OUT, DC IN) PRINTED WIRING BOARD

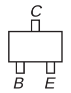
— Ref. No. FJ-25 Board; 4,000 Series —


FJ-25 BOARD(SIDE A)
E
D
C
B
A
16
1
2
3
4
5
6
7
8
9
10
JL907
JL908
JL905
JL909
JL906
JL900
LND990
D992
R992
D991
FB990
D990
LND991
JL910
Q912
Q913
R915
R914
D913
R913
C
B
E
C914
C913
C912
D916
R922
R923
R916
R910
D911
C915
C916
JL912
JL913
JL911
R921
R924
Q916
R920
Q914
C917
LND910
R919
C919
Q915
D954
FB956
VDR952
1-675-713-
LND950
J950
J951
J952
AUDIO / VIDEO
LANC
12

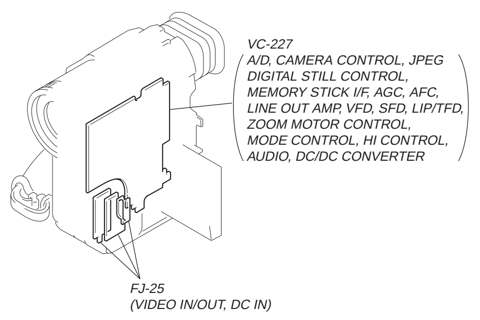
For printed wiring board

- Refer to page 4-94 for location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

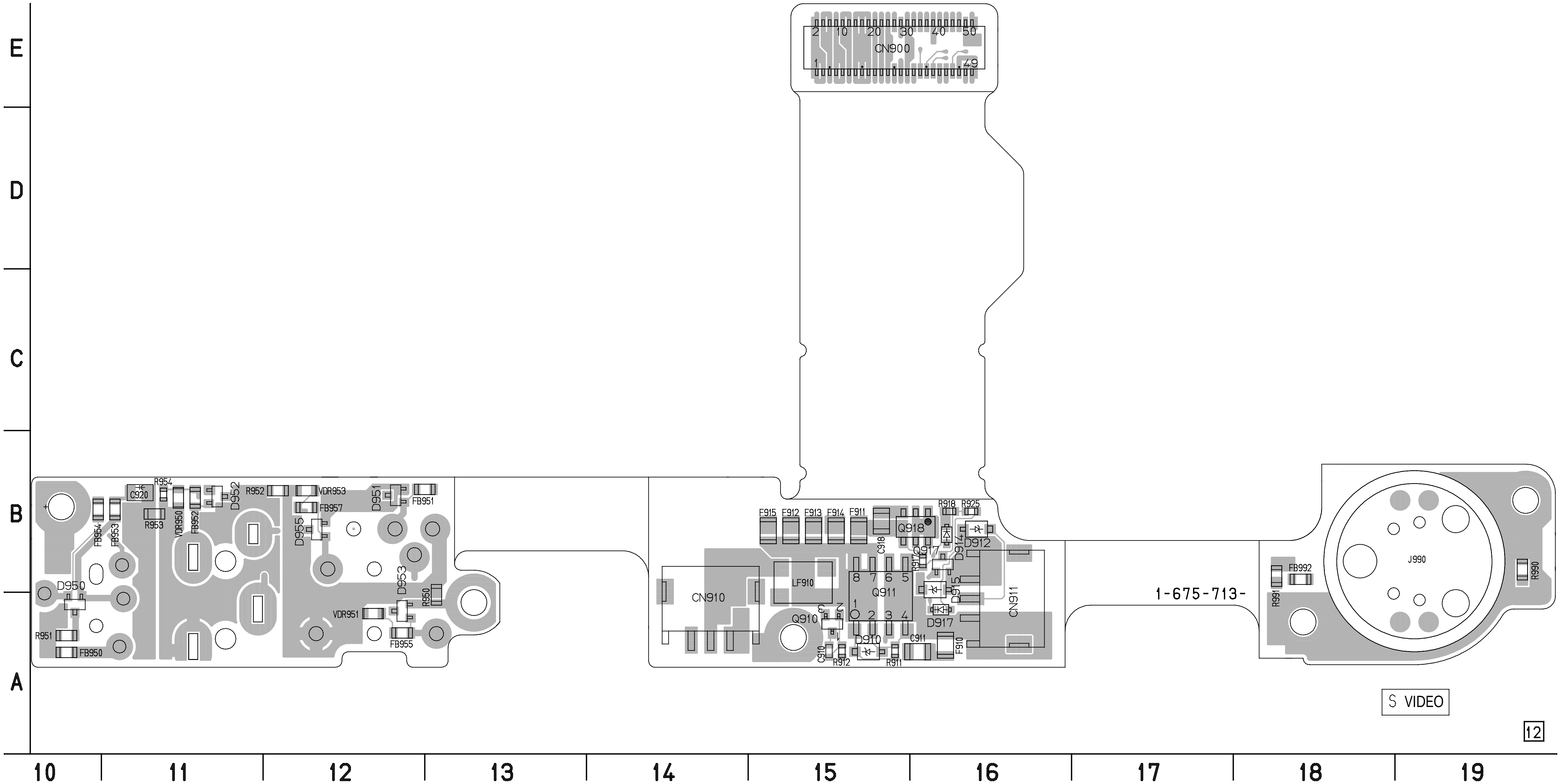
Transistor

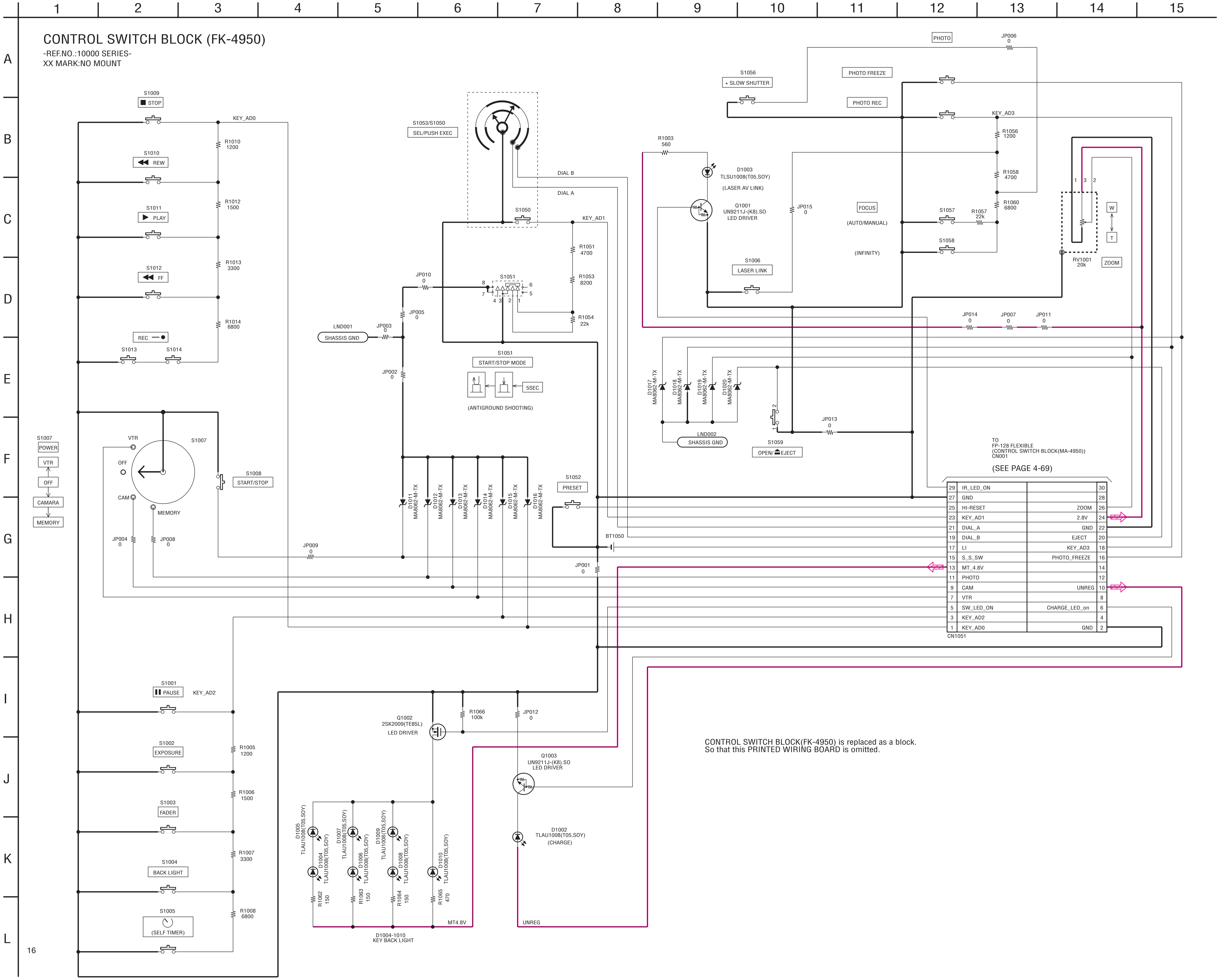


There are few cases that the part printed on this diagram isn't mounted in this model.


VC-227
A/D, CAMERA CONTROL, JPEG
DIGITAL STILL CONTROL,
MEMORY STICK I/F, AGC, AFC,
LINE OUT AMP, VFD, SFD, LIP/TFD,
ZOOM MOTOR CONTROL,
MODE CONTROL, HI CONTROL,
AUDIO, DC/DC CONVERTER
FJ-25
(VIDEO IN/OUT, DC IN)

FJ-25 BOARD(SIDE B)


E
D
C
B
A
10
11
12
13
14
15
16
17
18
19
CN900
2 10 20 30 40 50
1 49
C920
R954
R953
FB954
FB953
VDR950
FB952
D952
R952
VDR953
FB957
D955
D951
FB951
D950
R951
FB950
VDR951
D953
R950
FB955
F915 F912 F913 F914 F911
R918 R925
C918
Q918
Q917
D914
D912
R917
LF910
CN910
Q911
8 7 6 5
1 2 3 4
D915
D917
CN911
Q910
C912
C910
R912
D910
R911
C911
F910
1-675-713-
FB992
R991
J990
R990
S VIDEO
12

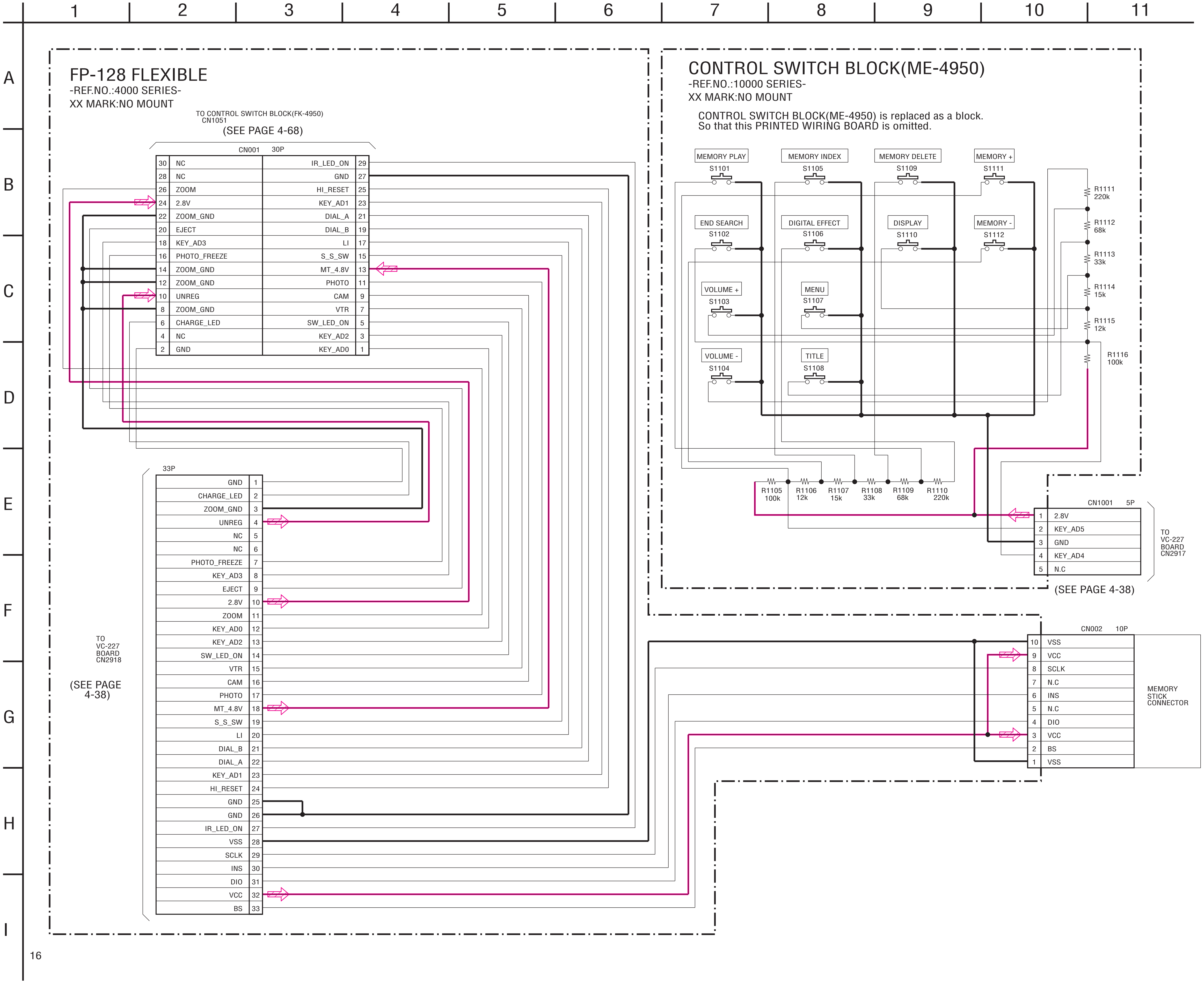


CONTROL SWITCH BLOCK (FK-4950)

-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
L
S1009
STOP
KEY_AD0
R1010
1200
S1010
REW
R1012
1500
S1011
PLAY
R1013
3300
S1012
FF
R1014
6800
REC
S1013
S1014
S1007
POWER
VTR
OFF
CAMARA
MEMORY
VTR
OFF
CAM
MEMORY
S1007
S1008
START/STOP
JP004
0
JP008
0
JP009
0
S1053/S1050
SEL/PUSH EXEC
DIAL B
DIAL A
S1050
KEY_AD1
R1051
4700
R1053
8200
R1054
22k
JP010
0
S1051
JP005
0
LND001
SHASSIS GND
JP003
0
JP002
0
S1051
START/STOP MODE
5SEC
(ANTIGROUND SHOOTING)
D1011
MA8062-M-TX
D1012
MA8062-M-TX
D1013
MA8062-M-TX
D1014
MA8062-M-TX
D1015
MA8062-M-TX
D1016
MA8062-M-TX
S1052
PRESET
BT1050
JP001
0
S1056
+ SLOW SHUTTER
R1003
560
D1003
TLSU1008(T05,SOY)
(LASER AV LINK)
Q1001
UN9211J-(K8).SO
LED DRIVER
JP015
0
S1006
LASER LINK
PHOTO
JP006
0
PHOTO FREEZE
PHOTO REC
KEY_AD3
R1056
1200
R1058
4700
R1060
6800
FOCUS
(AUTO/MANUAL)
(INFINITY)
S1057
R1057
22k
S1058
RV1001
20k
W
T
ZOOM
JP014
0
JP007
0
JP011
0
D1017
MA8062-M-TX
D1018
MA8062-M-TX
D1019
MA8062-M-TX
D1020
MA8062-M-TX
LND002
SHASSIS GND
S1059
OPEN/⏏EJECT
JP013
0
TO
FP-128 FLEXIBLE
(CONTROL SWITCH BLOCK(MA-4950))
CN001
(SEE PAGE 4-69)
29 IR_LED_ON 30
27 GND 28
25 HI-RESET ZOOM 26
23 KEY_AD1 2.8V 24
21 DIAL_A GND 22
19 DIAL_B EJECT 20
17 LI KEY_AD3 18
15 S_S_SW PHOTO_FREEZE 16
13 MT_4.8V 14
11 PHOTO 12
9 CAM UNREG 10
7 VTR 8
5 SW_LED_ON CHARGE_LED_on 6
3 KEY_AD2 4
1 KEY_AD0 GND 2
CN1051
S1001
PAUSE
KEY_AD2
S1002
EXPOSURE
R1005
1200
S1003
FADER
R1006
1500
S1004
BACK LIGHT
R1007
3300
S1005
(SELF TIMER)
R1008
6800
16
Q1002
2SK2009(TE85L)
LED DRIVER
R1066
100k
JP012
0
Q1003
UN9211J-(K8).SO
LED DRIVER
D1005
TLAU1008(T05,SOY)
D1004
TLAU1008(T05,SOY)
D1007
TLAU1008(T05,SOY)
D1006
TLAU1008(T05,SOY)
D1009
TLAU1008(T05,SOY)
D1008
TLAU1008(T05,SOY)
D1010
TLAU1008(T05,SOY)
R1062
150
R1063
150
R1064
150
R1065
470
MT4.8V
D1004-1010
KEY BACK LIGHT
D1002
TLAU1008(T05,SOY)
(CHARGE)
UNREG

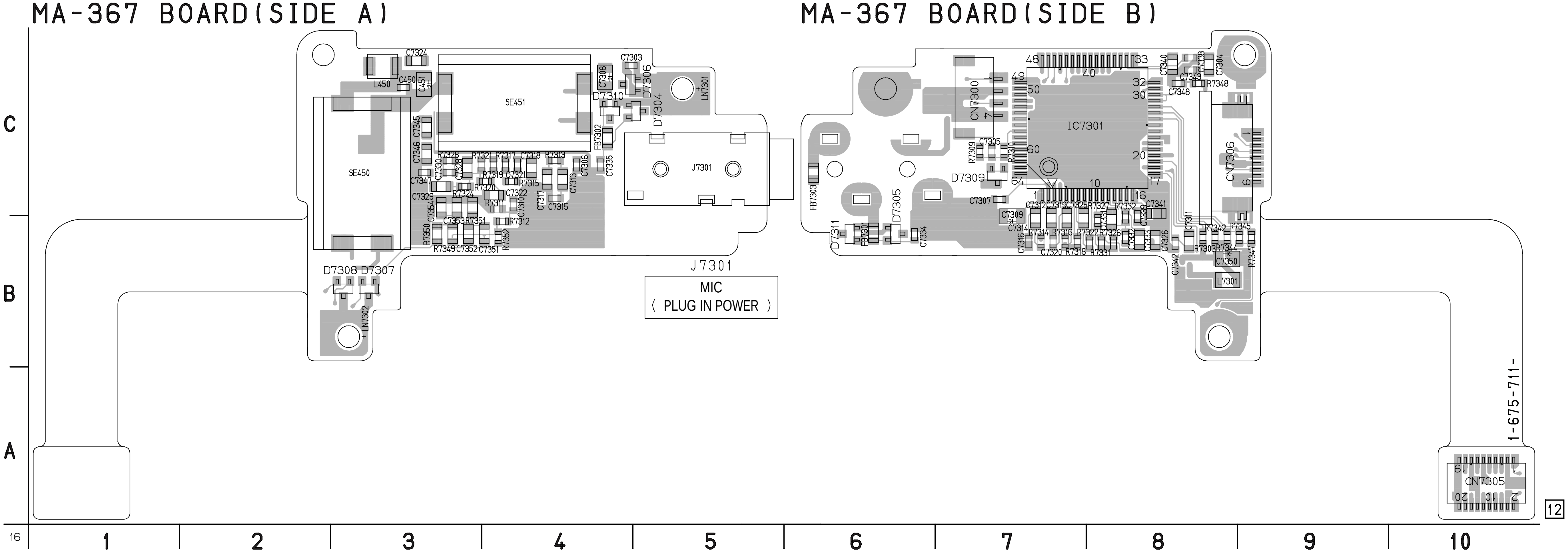
CONTROL SWITCH BLOCK(FK-4950) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.


1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I
FP-128 FLEXIBLE
-REF.NO.:4000 SERIES-
XX MARK:NO MOUNT
TO CONTROL SWITCH BLOCK(FK-4950) CN1051
(SEE PAGE 4-68)
CN001 30P
30 NC | IR_LED_ON 29
28 NC | GND 27
26 ZOOM | HI_RESET 25
24 2.8V | KEY_AD1 23
22 ZOOM_GND | DIAL_A 21
20 EJECT | DIAL_B 19
18 KEY_AD3 | LI 17
16 PHOTO_FREEZE | S_S_SW 15
14 ZOOM_GND | MT_4.8V 13
12 ZOOM_GND | PHOTO 11
10 UNREG | CAM 9
8 ZOOM_GND | VTR 7
6 CHARGE_LED | SW_LED_ON 5
4 NC | KEY_AD2 3
2 GND | KEY_AD0 1
33P
GND 1
CHARGE_LED 2
ZOOM_GND 3
UNREG 4
NC 5
NC 6
PHOTO_FREEZE 7
KEY_AD3 8
EJECT 9
2.8V 10
ZOOM 11
KEY_AD0 12
KEY_AD2 13
SW_LED_ON 14
VTR 15
CAM 16
PHOTO 17
MT_4.8V 18
S_S_SW 19
LI 20
DIAL_B 21
DIAL_A 22
KEY_AD1 23
HI_RESET 24
GND 25
GND 26
IR_LED_ON 27
VSS 28
SCLK 29
INS 30
DIO 31
VCC 32
BS 33
TO VC-227 BOARD CN2918
(SEE PAGE 4-38)
CONTROL SWITCH BLOCK(ME-4950)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
CONTROL SWITCH BLOCK(ME-4950) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.
MEMORY PLAY S1101
MEMORY INDEX S1105
MEMORY DELETE S1109
MEMORY + S1111
END SEARCH S1102
DIGITAL EFFECT S1106
DISPLAY S1110
MEMORY - S1112
VOLUME + S1103
MENU S1107
VOLUME - S1104
TITLE S1108
R1111 220k
R1112 68k
R1113 33k
R1114 15k
R1115 12k
R1116 100k
R1105 100k
R1106 12k
R1107 15k
R1108 33k
R1109 68k
R1110 220k
CN1001 5P
1 2.8V
2 KEY_AD5
3 GND
4 KEY_AD4
5 N.C
TO VC-227 BOARD CN2917
(SEE PAGE 4-38)
CN002 10P
10 VSS
9 VCC
8 SCLK
7 N.C
6 INS
5 N.C
4 DIO
3 VCC
2 BS
1 VSS
MEMORY STICK CONNECTOR
16

CONTROL SWITCH BLOCK
ME-4950

MA-367 (MIC AMP) PRINTED WIRING BOARD

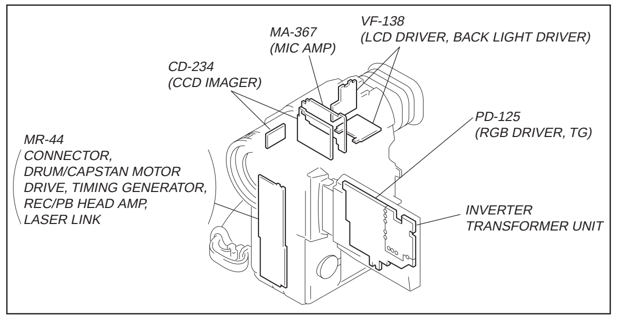
— Ref. No. MA-367 Board; 10,000 Series —

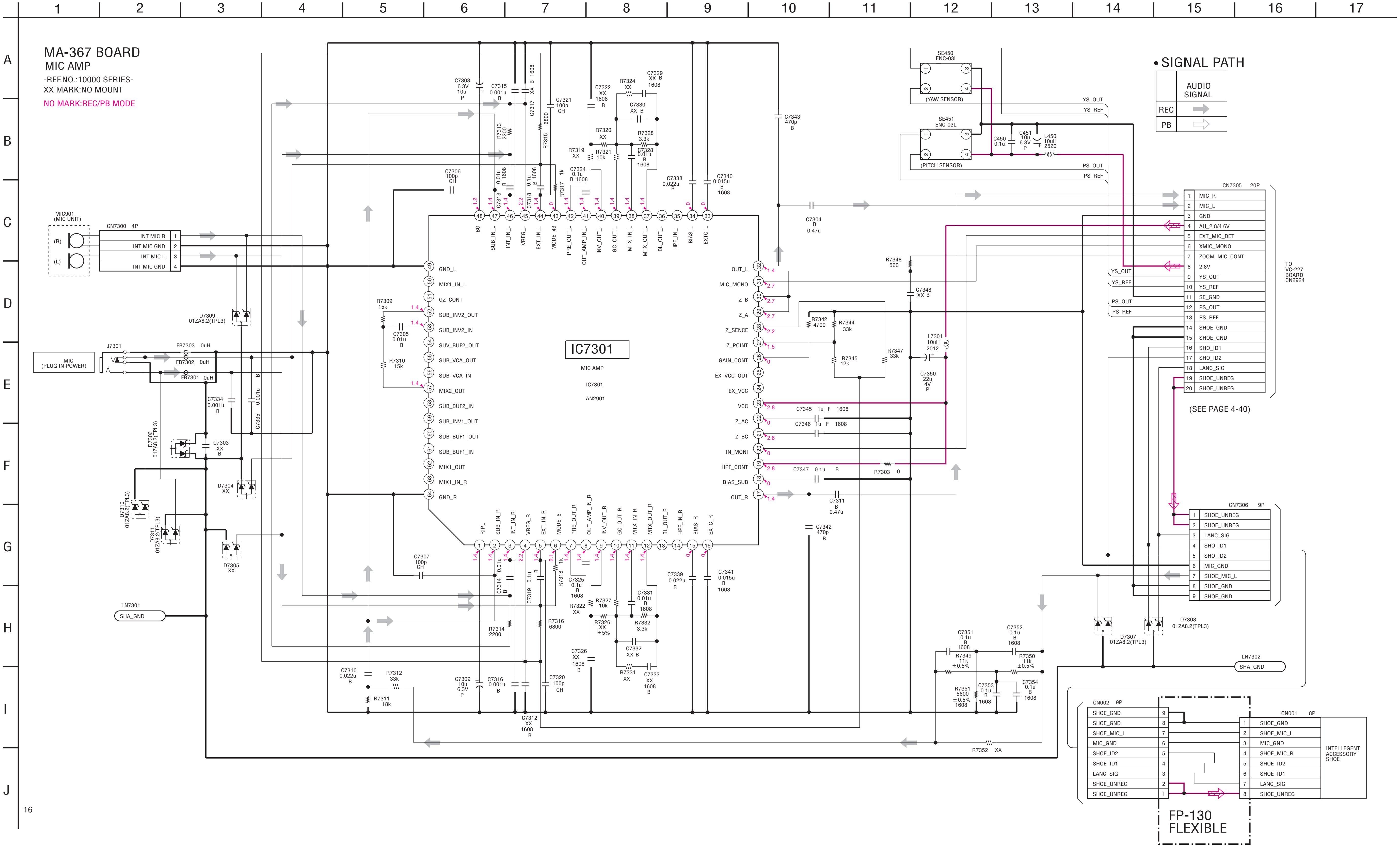

MA-367 BOARD(SIDE A)
MA-367 BOARD(SIDE B)
C
B
A
1
2
3
4
5
6
7
8
9
10
16
SE450
SE451
L450
C450
C451
C7324
C7303
C7308
D7310
D7306
D7304
LN7301
FB7302
J7301
D7308 D7307
LN7302
J7301
MIC
(PLUG IN POWER)
IC7301
CN7300
CN7306
CN7305
D7309
D7305
D7311
FB7301
FB7303
L7301
C7350
1-675-711-
12

For printed wiring board

- Refer to page 4-95 for location.
- This board is six-layer print board. However, the patterns of layers two to four have not been included in the diagram.

There are few cases that the part printed on this diagram isn't mounted in this model.

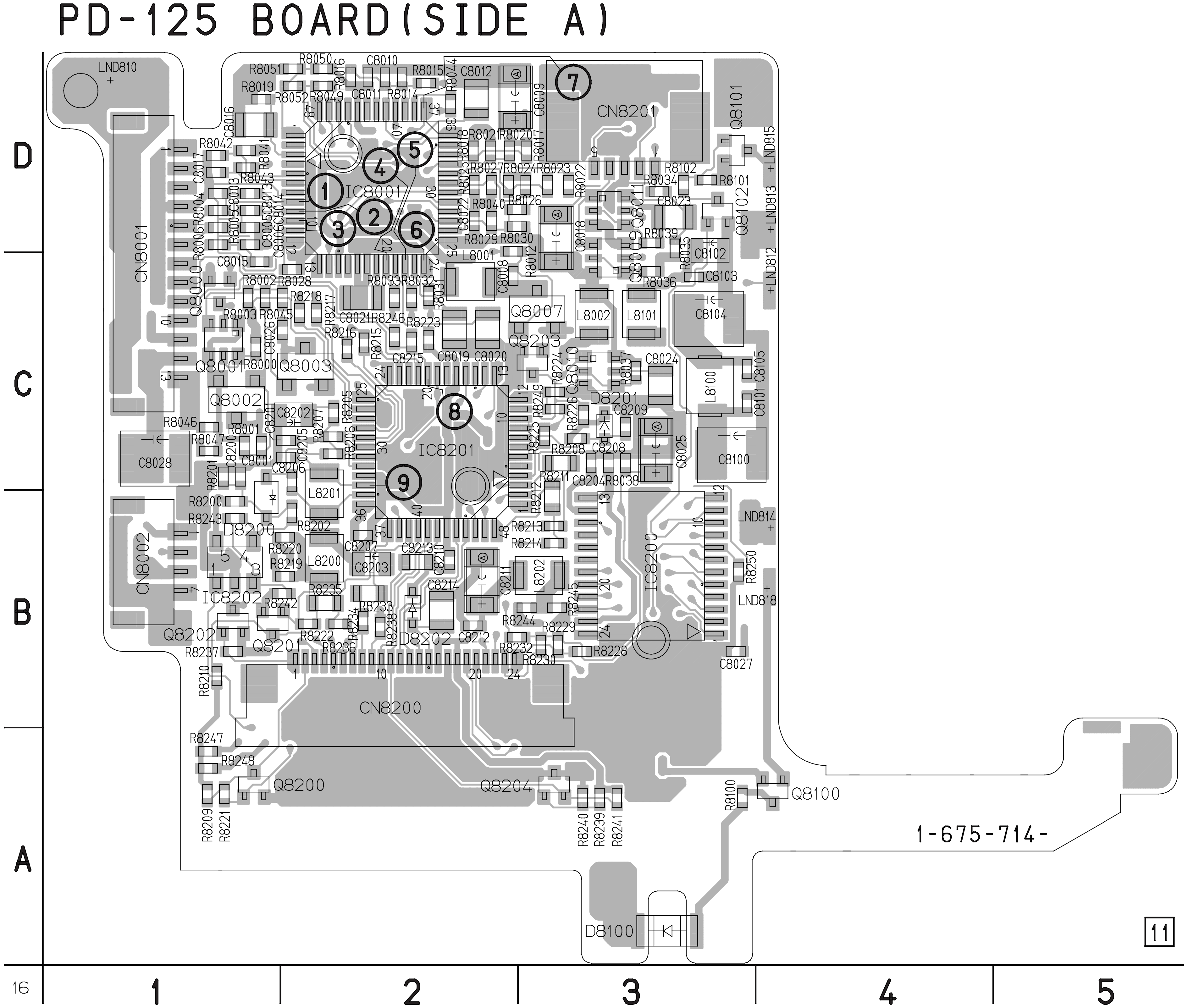

MA-367
(MIC AMP)
VF-138
(LCD DRIVER, BACK LIGHT DRIVER)
CD-234
(CCD IMAGER)
PD-125
(RGB DRIVER, TG)
MR-44
CONNECTOR,
DRUM/CAPSTAN MOTOR
DRIVE, TIMING GENERATOR,
REC/PB HEAD AMP,
LASER LINK
INVERTER
TRANSFORMER UNIT


MA-367 BOARD
MIC AMP
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
• SIGNAL PATH
AUDIO SIGNAL
REC
PB
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
MIC901 (MIC UNIT)
(R)
(L)
CN7300 4P
INT MIC R
INT MIC GND
INT MIC L
INT MIC GND
MIC (PLUG IN POWER)
J7301
FB7303 0uH
FB7302 0uH
FB7301 0uH
D7309 01ZA8.2(TPL3)
D7306 01ZA8.2(TPL3)
D7310 01ZA8.2(TPL3)
D7311 01ZA8.2(TPL3)
D7304 XX
D7305 XX
C7334 0.001u B
C7335 0.001u B
C7303 XX B
LN7301
SHA_GND
IC7301
MIC AMP
IC7301
AN2901
GND_L
MIX1_IN_L
GZ_CONT
SUB_INV2_OUT
SUB_INV2_IN
SUV_BUF2_OUT
SUB_VCA_OUT
SUB_VCA_IN
MIX2_OUT
SUB_BUF2_IN
SUB_INV1_OUT
SUB_BUF1_OUT
SUB_BUF1_IN
MIX1_OUT
MIX1_IN_R
GND_R
BG
SUB_IN_L
INT_IN_L
VREG_L
EXT_IN_L
MODE_43
PRE_OUT_L
OUT_AMP_IN_L
INV_OUT_L
GC_OUT_L
MTX_IN_L
MTX_OUT_L
BL_OUT_L
HPF_IN_L
BIAS_L
EXTC_L
OUT_L
MIC_MONO
Z_B
Z_A
Z_SENCE
Z_POINT
GAIN_CONT
EX_VCC_OUT
EX_VCC
VCC
Z_AC
Z_BC
IN_MONI
HPF_CONT
BIAS_SUB
OUT_R
RIPL
SUB_IN_R
INT_IN_R
VREG_R
EXT_IN_R
MODE_6
PRE_OUT_R
OUT_AMP_IN_R
INV_OUT_R
GC_OUT_R
MTX_IN_R
MTX_OUT_R
BL_OUT_R
HPF_IN_R
BIAS_R
EXTC_R
C7308 6.3V 10u P
C7315 0.001u B
C7317 XX B 1608
C7321 100p CH
C7322 XX 1608 B
R7324 XX
C7329 XX B 1608
C7330 XX B
R7320 XX
R7321 10k
R7328 3.3k
C7328 0.01u B 1608
R7319 XX
R7313 2200
R7315 6800
C7306 100p CH
C7313 0.01u B 1608
C7318 0.1u B 1608
R7317 1k
C7324 0.1u B 1608
C7338 0.022u B
C7340 0.015u B 1608
C7343 470p B
C7304 B 0.47u
R7309 15k
C7305 0.01u B
R7310 15k
R7348 560
C7348 XX B
R7342 4700
R7344 33k
R7345 12k
R7347 33k
L7301 10uH 2012
C7350 22u 4V P
C7345 1u F 1608
C7346 1u F 1608
C7347 0.1u B
R7303 0
C7311 B 0.47u
C7342 470p B
C7307 100p CH
C7314 0.01u B
C7319 0.1u B
R7318 1k
C7325 0.1u B 1608
R7322 XX
R7327 10k
R7326 XX ±5%
C7331 0.01u B 1608
R7332 3.3k
C7332 XX B
R7331 XX
C7333 XX 1608 B
C7339 0.022u B
C7341 0.015u B 1608
R7314 2200
R7316 6800
C7326 XX 1608 B
C7310 0.022u B
R7312 33k
R7311 18k
C7309 10u 6.3V P
C7316 0.001u B
C7320 100p CH
C7312 XX 1608 B
SE450 ENC-03L
(YAW SENSOR)
SE451 ENC-03L
(PITCH SENSOR)
C450 0.1u
C451 10u 6.3V P
L450 10uH 2520
YS_OUT
YS_REF
PS_OUT
PS_REF
CN7305 20P
MIC_R
MIC_L
GND
AU_2.8/4.6V
EXT_MIC_DET
XMIC_MONO
ZOOM_MIC_CONT
2.8V
YS_OUT
YS_REF
SE_GND
PS_OUT
PS_REF
SHOE_GND
SHOE_GND
SHO_ID1
SHO_ID2
LANC_SIG
SHOE_UNREG
SHOE_UNREG
TO VC-227 BOARD CN2924
(SEE PAGE 4-40)
CN7306 9P
SHOE_UNREG
SHOE_UNREG
LANC_SIG
SHO_ID1
SHO_ID2
MIC_GND
SHOE_MIC_L
SHOE_GND
SHOE_GND
D7307 01ZA8.2(TPL3)
D7308 01ZA8.2(TPL3)
LN7302
SHA_GND
C7351 0.1u B 1608
R7349 11k ±0.5%
C7352 0.1u B 1608
R7350 11k ±0.5%
R7351 5600 ±0.5% 1608
C7353 0.1u B 1608
C7354 0.1u B 1608
R7352 XX
CN002 9P
SHOE_GND
SHOE_GND
SHOE_MIC_L
MIC_GND
SHOE_ID2
SHOE_ID1
LANC_SIG
SHOE_UNREG
SHOE_UNREG
CN001 8P
SHOE_GND
SHOE_MIC_L
MIC_GND
SHOE_MIC_R
SHOE_ID2
SHOE_ID1
LANC_SIG
SHOE_UNREG
INTELLEGENT ACCESSORY SHOE
FP-130 FLEXIBLE
16

MIC AMP
MA-367

PD-125 (RGB DRIVER, TG) PRINTED WIRING BOARD

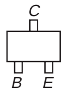
— Ref. No. PD-125 Board; 10,000 Series —


PD-125 BOARD(SIDE A)
D
C
B
A
1
2
3
4
5
16
LND810
CN8001
CN8002
CN8200
CN8201
IC8001
IC8201
IC8202
IC8200
Q8000
Q8001
Q8002
Q8003
Q8007
Q8009
Q8010
Q8011
Q8101
Q8102
Q8200
Q8201
Q8202
Q8203
Q8204
Q8100
D8100
D8200
D8201
D8202
L8001
L8002
L8100
L8101
L8200
L8201
L8202
C8028
C8100
C8104
C8024
C8025
C8027
LND812
LND813
LND814
LND815
LND818
R8050
R8051
R8019
R8042
R8046
R8047
R8200
R8243
R8247
R8248
R8209
R8221
R8240
R8239
R8241
R8250
1-675-714-
①
②
③
④
⑤
⑥
⑦
⑧
⑨
11

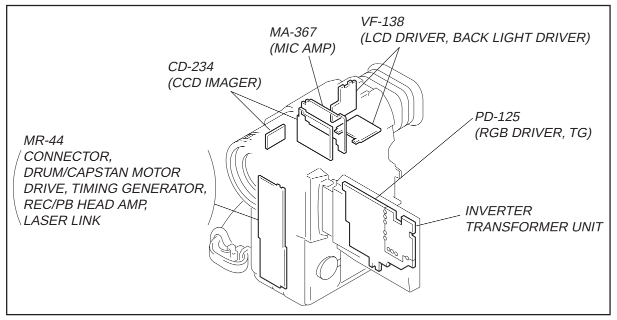
For printed wiring board

- Refer to page 4-95 for location.
- This board is four-layer print board. However, the patterns of layers two to four have not been included in the diagram.
- Chip parts

Transistor



There are few cases that the part printed on this diagram isn't mounted in this model.


MA-367
(MIC AMP)
VF-138
(LCD DRIVER, BACK LIGHT DRIVER)
CD-234
(CCD IMAGER)
PD-125
(RGB DRIVER, TG)
MR-44
CONNECTOR,
DRUM/CAPSTAN MOTOR
DRIVE, TIMING GENERATOR,
REC/PB HEAD AMP,
LASER LINK
INVERTER
TRANSFORMER UNIT

For Schematic Diagram
- Refer to page 4-90 for waveforms.

PD-125 BOARD(1/2)
RGB DRIVER(PD-1 BLOCK)

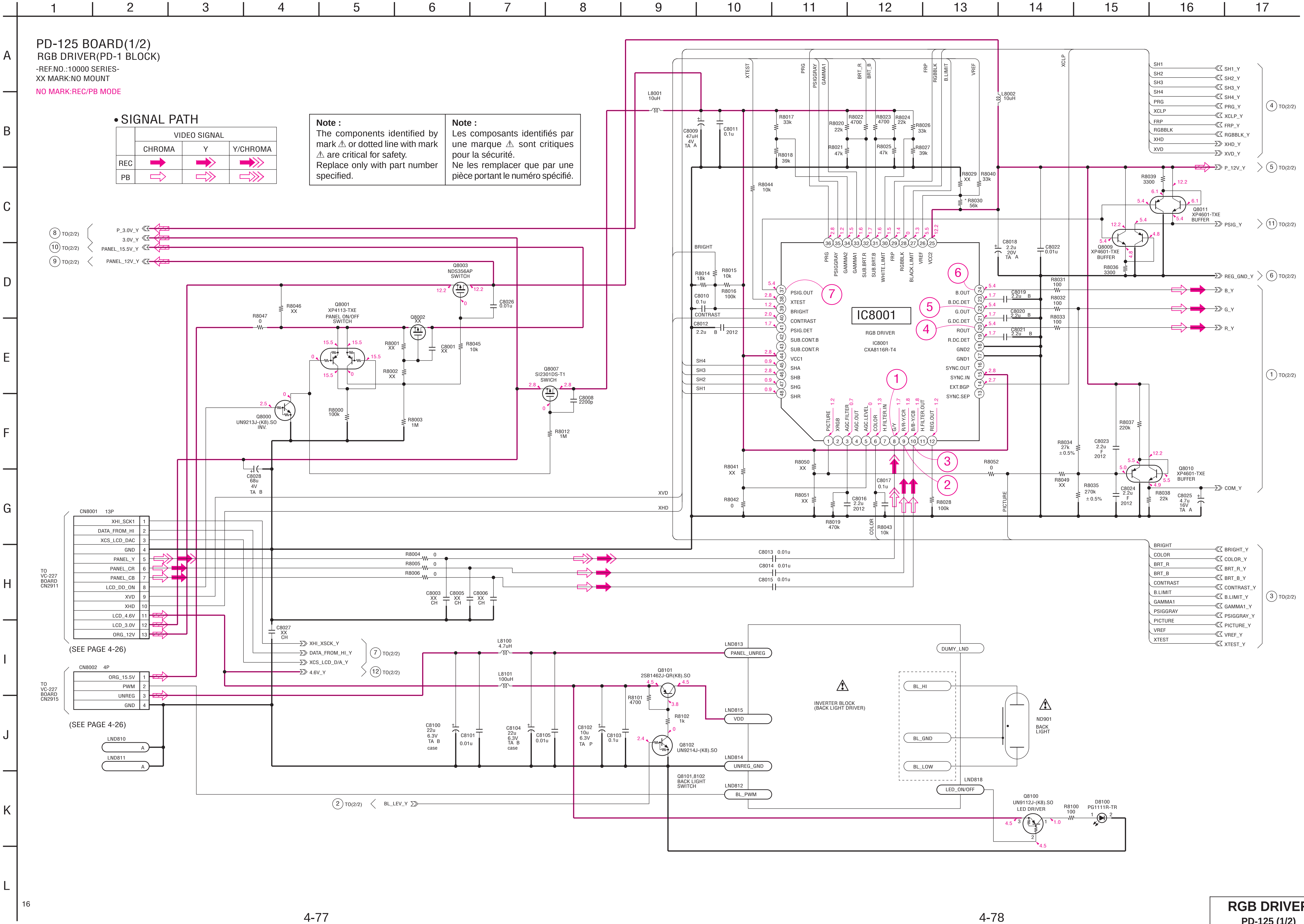
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

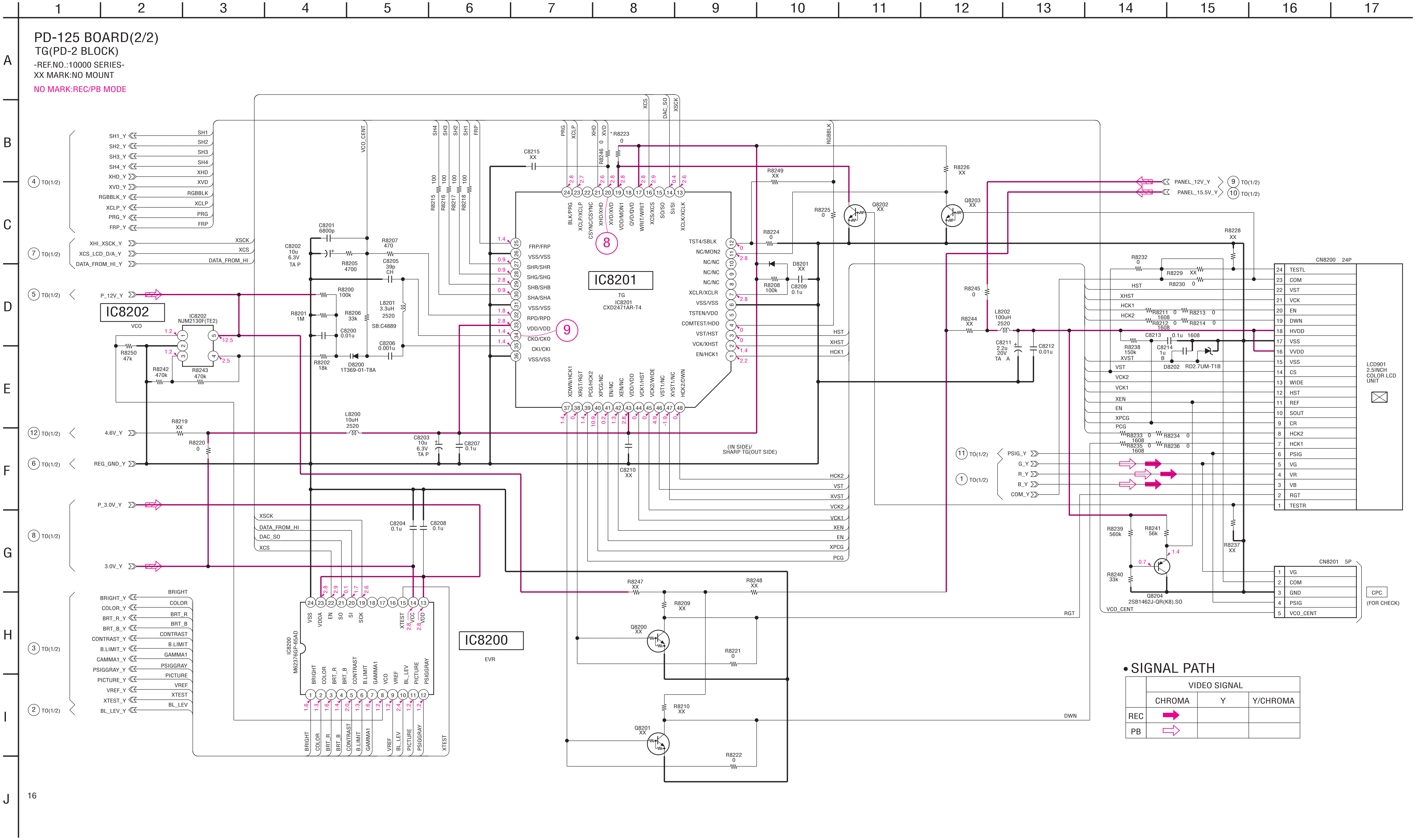
Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
K
L
IC8001
RGB DRIVER
IC8001
CXA8116R-T4
PSIG.OUT
XTEST
BRIGHT
CONTRAST
PSIG.DET
SUB.CONT.B
SUB.CONT.R
VCC1
SHA
SHB
SHG
SHR
B.OUT
B.DC.DET
G.OUT
G.DC.DET
ROUT
R.DC.DET
GND2
GND1
SYNC.OUT
SYNC.IN
EXT.BGP
SYNC.SEP
PICTURE
XRGB
AGC.FILTER
AGC.OUT
AGC.LEVEL
COLOR
H.FILTER.IN
G/Y
R/R-Y/CR
B/B-Y/CB
H.FILTER.OUT
REG.OUT
PRG
PSIGGRAY
GAMMA2
GAMMA1
SUB.BRT.R
SUB.BRT.B
WHITE.LIMIT
FRP
RGBBLK
BLACK.LIMIT
VREF
VCC2
XTEST
GAMMA1
BRT_R
BRT_B
RGBBLK
B.LIMIT
XCLP
L8001
10uH
L8002
10uH
C8009
47uH
4V
TA A
C8011
0.1u
R8017
33k
R8018
39k
R8020
22k
R8021
47k
R8022
4700
R8023
4700
R8024
22k
R8025
47k
R8026
33k
R8027
39k
R8029
XX
R8040
33k
R8030
56k
R8044
10k
R8014
18k
R8015
10k
R8016
100k
C8010
0.1u
C8012
2.2u B 2012
C8018
2.2u
20V
TA A
C8022
0.01u
C8019
2.2u B
C8020
2.2u B
C8021
2.2u B
R8031
100
R8032
100
R8033
100
R8039
3300
Q8011
XP4601-TXE
BUFFER
Q8009
XP4601-TXE
BUFFER
R8036
3300
SH1
SH2
SH3
SH4
XCLP
FRP
RGBBLK
XHD
XVD
SH1_Y
SH2_Y
SH3_Y
SH4_Y
PRG_Y
XCLP_Y
FRP_Y
RGBBLK_Y
XHD_Y
XVD_Y
P_12V_Y
PSIG_Y
REG_GND_Y
B_Y
G_Y
R_Y
COM_Y
④ TO(2/2)
⑤ TO(2/2)
⑪ TO(2/2)
⑥ TO(2/2)
① TO(2/2)
③ TO(2/2)
⑧ TO(2/2)
⑩ TO(2/2)
⑨ TO(2/2)
P_3.0V_Y
3.0V_Y
PANEL_15.5V_Y
PANEL_12V_Y
Q8003
NDS356AP
SWITCH
C8026
0.01u
R8046
XX
R8047
0
Q8001
XP4113-TXE
PANEL ON/OFF
SWITCH
Q8002
XX
R8001
XX
C8001
XX
R8045
10k
R8002
XX
R8000
100k
R8003
1M
Q8000
UN9213J-(K8).SO
INV.
Q8007
SI2301DS-T1
SWICH
C8008
2200p
R8012
1M
C8028
68u
4V
TA B
R8034
27k
±0.5%
C8023
2.2u
F
2012
R8037
220k
Q8010
XP4601-TXE
BUFFER
R8035
270k
±0.5%
C8024
2.2u
F
2012
R8038
22k
C8025
4.7u
16V
TA A
R8049
XX
R8052
0
R8050
XX
R8051
XX
R8041
XX
R8042
0
C8016
2.2u
2012
C8017
0.1u
R8019
470k
R8043
10k
R8028
100k
PICTURE
COLOR
XVD
XHD
CN8001 13P
XHI_SCK1
DATA_FROM_HI
XCS_LCD_DAC
GND
PANEL_Y
PANEL_CR
PANEL_CB
LCD_DD_ON
XVD
XHD
LCD_4.6V
LCD_3.0V
ORG_12V
TO
VC-227
BOARD
CN2911
(SEE PAGE 4-26)
R8004
0
R8005
0
R8006
0
C8003
XX
CH
C8005
XX
CH
C8006
XX
CH
C8013 0.01u
C8014 0.01u
C8015 0.01u
C8027
XX
CH
XHI_XSCK_Y
DATA_FROM_HI_Y
XCS_LCD_D/A_Y
4.6V_Y
⑦ TO(2/2)
⑫ TO(2/2)
BRIGHT
COLOR
BRT_R
BRT_B
CONTRAST
B.LIMIT
GAMMA1
PSIGGRAY
PICTURE
VREF
XTEST
BRIGHT_Y
COLOR_Y
BRT_R_Y
BRT_B_Y
CONTRAST_Y
B.LIMIT_Y
GAMMA1_Y
PSIGGRAY_Y
PICTURE_Y
VREF_Y
XTEST_Y
CN8002 4P
ORG_15.5V
PWM
UNREG
GND
TO
VC-227
BOARD
CN2915
(SEE PAGE 4-26)
LND810
LND811
L8100
4.7uH
L8101
100uH
Q8101
2SB1462J-QR(K8).SO
R8101
4700
R8102
1k
Q8102
UN9214J-(K8).SO
Q8101,8102
BACK LIGHT
SWITCH
C8100
22u
6.3V
TA B
case
C8101
0.01u
C8104
22u
6.3V
TA B
case
C8105
0.01u
C8102
10u
6.3V
TA P
C8103
0.1u
LND813
PANEL_UNREG
LND815
VDD
LND814
UNREG_GND
LND812
BL_PWM
INVERTER BLOCK
(BACK LIGHT DRIVER)
DUMY_LND
BL_HI
BL_GND
BL_LOW
LND818
LED_ON/OFF
ND901
BACK
LIGHT
Q8100
UN9112J-(K8).SO
LED DRIVER
R8100
100
D8100
PG1111R-TR
② TO(2/2)
BL_LEV_Y

For Schematic Diagram

- Refer to page 4-75 for printed wiring board.
- Refer to page 4-90 for waveforms.

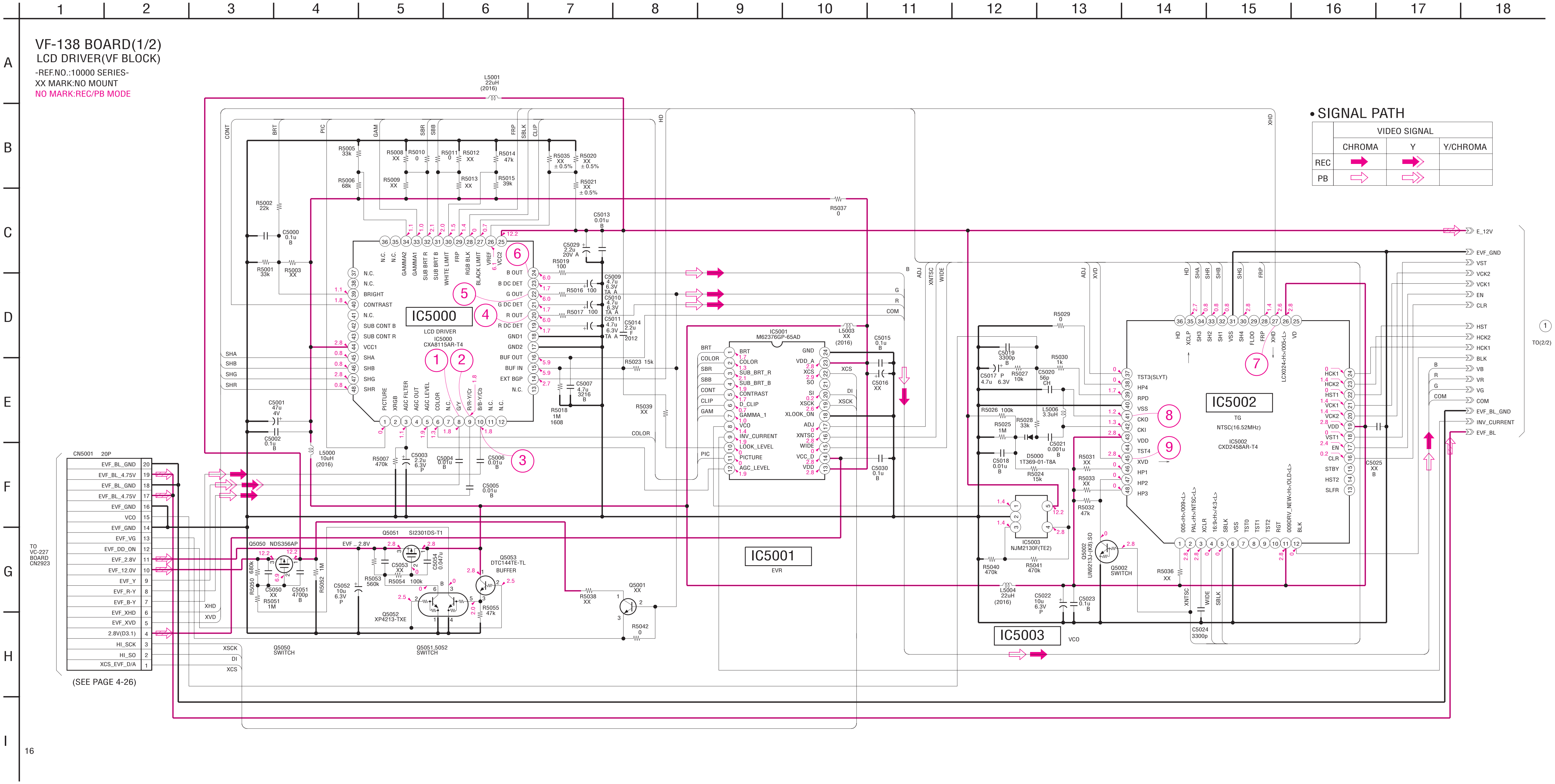

PD-125 BOARD(2/2)
TG(PD-2 BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
IC8201
TG
IC8201
CXD2471AR-T4
(IN SIDE)/
SHARP TG(OUT SIDE)
IC8202
IC8202
NJM2130F(TE2)
VCO
IC8200
EVR
IC8200
M62376GP-65AD
CN8200 24P
CN8201 5P
LCD901
2.5INCH
COLOR LCD
UNIT
CPC
(FOR CHECK)
Q8202
Q8203
Q8204
2SB1462J-QR(K8).SO
Q8200
Q8201
D8200
1T369-01-T8A
D8202 RD2.7UM-T1B
PANEL_12V_Y
PANEL_15.5V_Y
TO(1/2)
P_12V_Y
4.6V_Y
REG_GND_Y
P_3.0V_Y
3.0V_Y
PSIG_Y
G_Y
R_Y
B_Y
COM_Y
VCO_CENT
RGT
DWN
16

• SIGNAL PATH

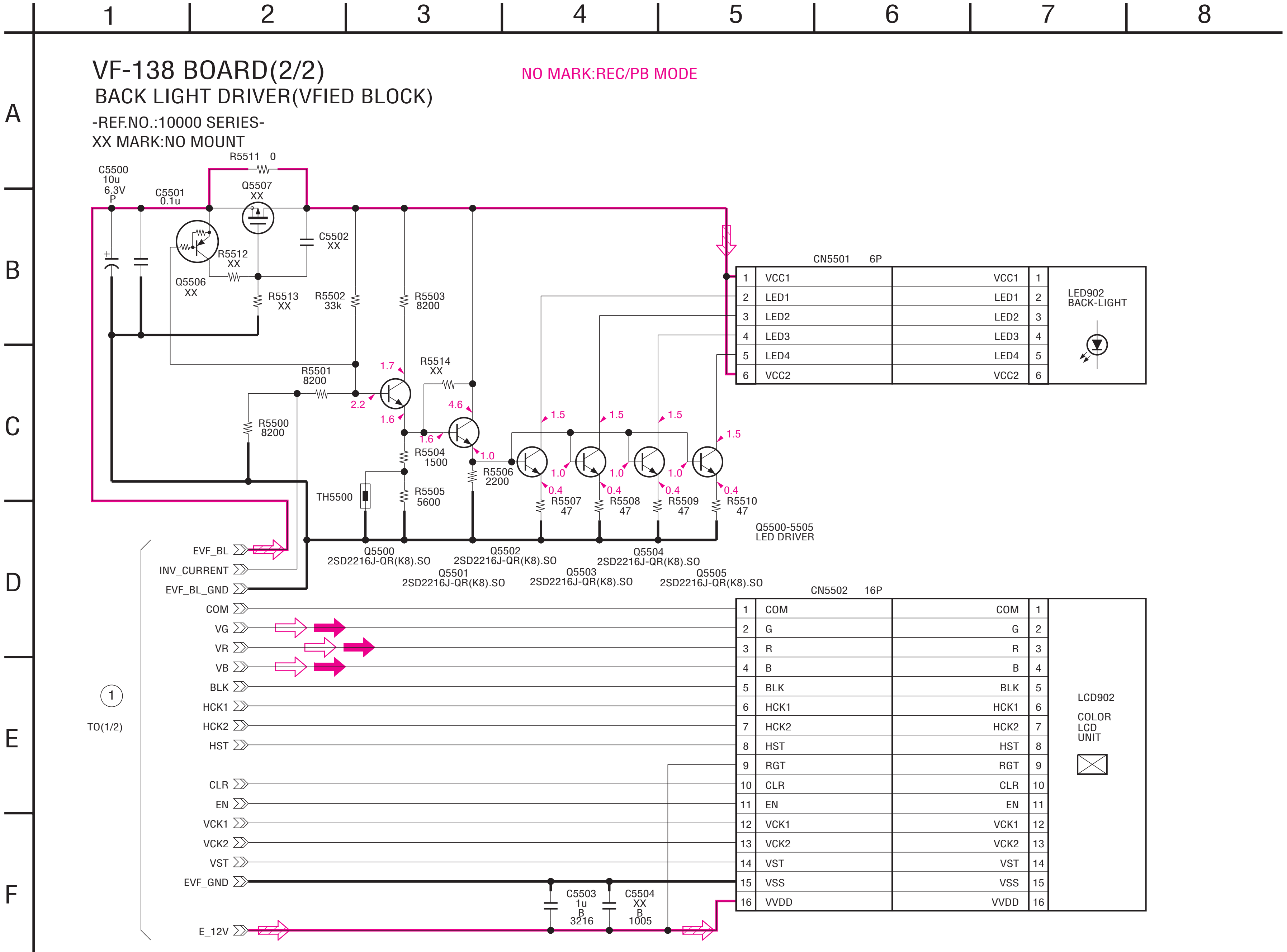
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

For Schematic Diagram

- Refer to page 4-85 for printed wiring board.
- Refer to page 4-91 for waveforms.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I
VF-138 BOARD(1/2)
LCD DRIVER(VF BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
• SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
IC5000
LCD DRIVER
IC5000
CXA8115AR-T4
IC5001
M62376GP-65AD
IC5001
EVR
IC5002
TG
NTSC(16.52MHz)
IC5002
CXD2458AR-T4
IC5003
NJM2130F(TE2)
IC5003
VCO
CN5001 20P
TO VC-227 BOARD CN2923
(SEE PAGE 4-26)
L5001 22uH (2016)
L5000 10uH (2016)
L5003 XX (2016)
L5004 22uH (2016)
L5006 3.3uH
D5000 1T369-01-T8A
Q5050 NDS356AP
Q5050 SWITCH
Q5051 SI2301DS-T1
Q5052 XP4213-TXE
Q5051,5052 SWITCH
Q5053 DTC144TE-TL BUFFER
Q5001
Q5002 UN9213J-(K8).SO
Q5002 SWITCH
E_12V
EVF_GND
VST
VCK2
VCK1
EN
CLR
HST
HCK2
HCK1
BLK
VB
VR
VG
COM
EVF_BL_GND
INV_CURRENT
EVF_BL
TO(2/2)
16

LCD DRIVER
VF-138 (1/2)


1
2
3
4
5
6
7
8
A
B
C
D
E
F
VF-138 BOARD(2/2)
BACK LIGHT DRIVER(VFIED BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R5511 0
C5500 10u 6.3V P
C5501 0.1u
Q5507 XX
C5502 XX
R5512 XX
Q5506 XX
R5513 XX
R5502 33k
R5503 8200
R5501 8200
R5514 XX
R5500 8200
R5504 1500
R5505 5600
TH5500
R5506 2200
R5507 47
R5508 47
R5509 47
R5510 47
1.7
2.2
1.6
4.6
1.6
1.0
1.5
1.5
1.5
1.5
1.0
1.0
1.0
0.4
0.4
0.4
0.4
Q5500 2SD2216J-QR(K8).SO
Q5501 2SD2216J-QR(K8).SO
Q5502 2SD2216J-QR(K8).SO
Q5503 2SD2216J-QR(K8).SO
Q5504 2SD2216J-QR(K8).SO
Q5505 2SD2216J-QR(K8).SO
Q5500-5505 LED DRIVER
CN5501 6P
1 VCC1 VCC1 1
2 LED1 LED1 2
3 LED2 LED2 3
4 LED3 LED3 4
5 LED4 LED4 5
6 VCC2 VCC2 6
LED902 BACK-LIGHT
EVF_BL
INV_CURRENT
EVF_BL_GND
COM
VG
VR
VB
BLK
HCK1
HCK2
HST
CLR
EN
VCK1
VCK2
VST
EVF_GND
E_12V
①
TO(1/2)
CN5502 16P
1 COM COM 1
2 G G 2
3 R R 3
4 B B 4
5 BLK BLK 5
6 HCK1 HCK1 6
7 HCK2 HCK2 7
8 HST HST 8
9 RGT RGT 9
10 CLR CLR 10
11 EN EN 11
12 VCK1 VCK1 12
13 VCK2 VCK2 13
14 VST VST 14
15 VSS VSS 15
16 VVDD VVDD 16
LCD902
COLOR LCD UNIT
C5503 1u B 3216
C5504 XX B 1005

G

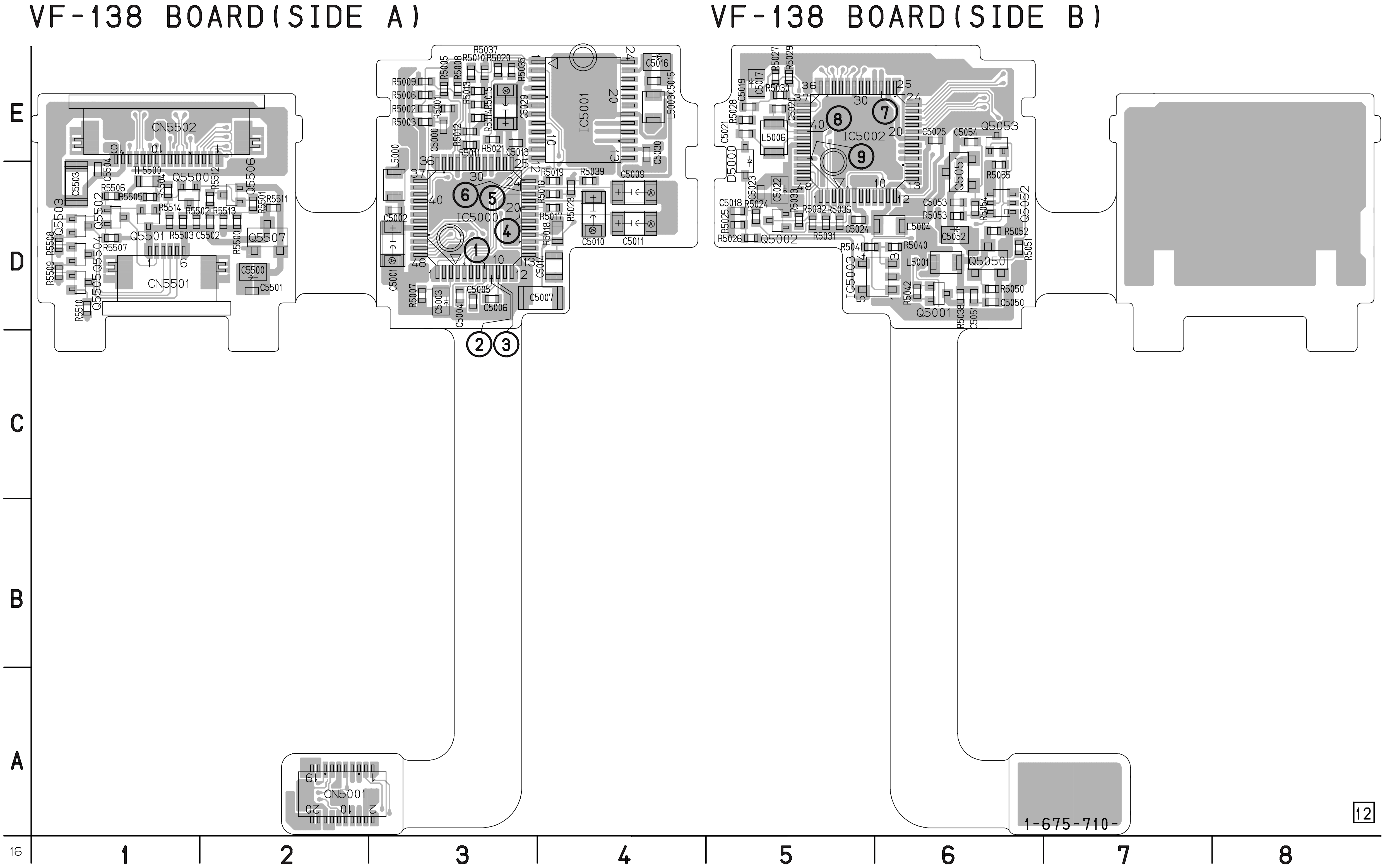
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

16

VF-138 (LCD DRIVER, BACK LIGHT DRIVER) PRINTED WIRING BOARD

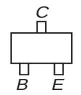
— Ref. No. VF-138 Board; 1,000 Series —


VF-138 BOARD(SIDE A)
VF-138 BOARD(SIDE B)
E
D
C
B
A
1
2
3
4
5
6
7
8
16
12
CN5502
CN5501
CN5001
IC5000
IC5001
IC5002
IC5003
Q5500
Q5501
Q5502
Q5503
Q5504
Q5505
Q5506
Q5507
Q5001
Q5002
Q5050
Q5051
Q5052
Q5053
TH5500
D5000
L5000
L5001
L5003
L5004
L5006
①
②
③
④
⑤
⑥
⑦
⑧
⑨
1-675-710-

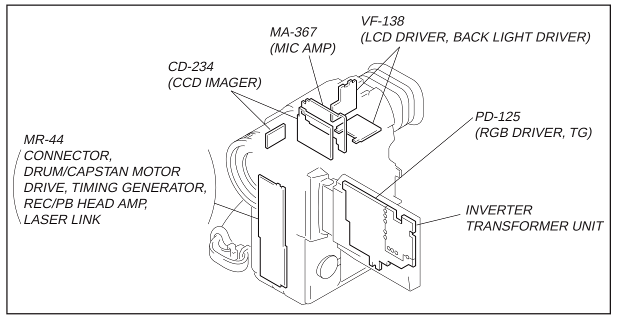
For printed wiring board

- Refer to page 4-96 for location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor



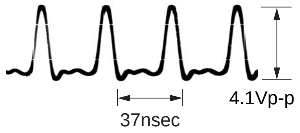
There are few cases that the part printed on this diagram isn’t mounted in this model.


MA-367
(MIC AMP)
VF-138
(LCD DRIVER, BACK LIGHT DRIVER)
CD-234
(CCD IMAGER)
PD-125
(RGB DRIVER, TG)
MR-44
CONNECTOR,
DRUM/CAPSTAN MOTOR
DRIVE, TIMING GENERATOR,
REC/PB HEAD AMP,
LASER LINK
INVERTER
TRANSFORMER UNIT

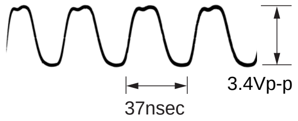
4-3. WAVEFORMS

CD-234 BOARD

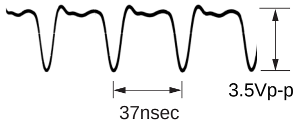
① IC102 ⑨
CAMERA REC



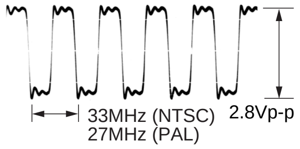
② IC102 ⑬
CAMERA REC



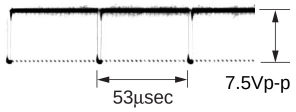
③ IC102 ⑯,⑰
CAMERA REC



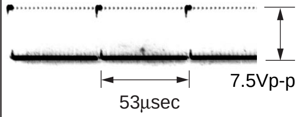
④ IC102 ㉕
CAMERA REC/PB



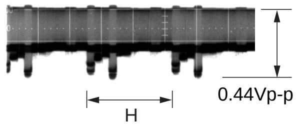
⑤ IC102 ㊵,㊹
CAMERA REC



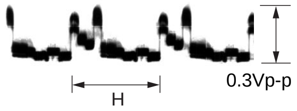
⑥ IC102 ㊶,㊷
CAMERA REC



⑦ Q104 Ⓔ
CAMERA REC



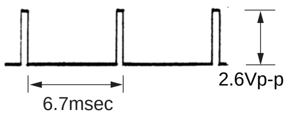
⑧ IC104 ⑤
CAMERA REC



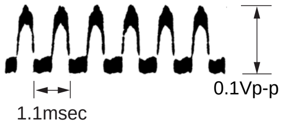
MR-44 BOARD (2/5)

CAMERA REC/PB

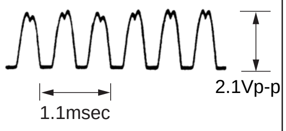
① IC2503 ④



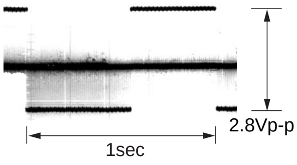
② IC2503 ㉒,㉓,㉔



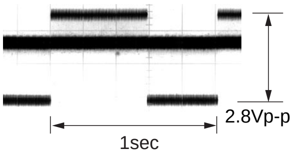
③ IC2503 ㉕,㉖,㉗



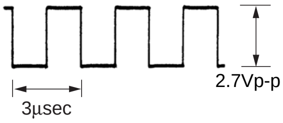
④ IC2503 ㊺



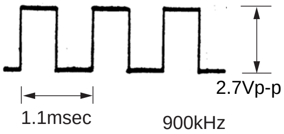
⑤ IC2503 ㊽



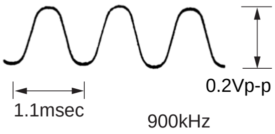
⑥ IC2503 (54)



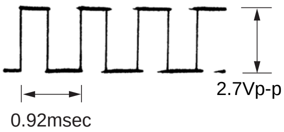
⑦ IC2503 (60)



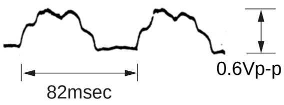
⑧ IC2503 (63)



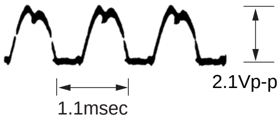
⑨ IC2504 ⑰



⑩ IC2504 ㉛,㉝,㉞

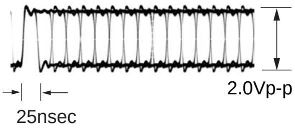


⑪ IC2505 ②,⑱,㉓

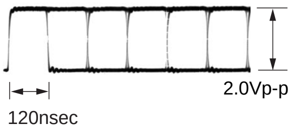


MR-44 BOARD (3/5)

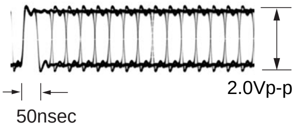
⑫ IC1900 ⑪
CAMERA REC



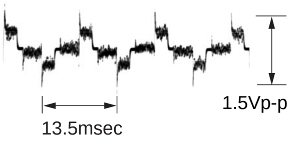
⑬ IC1900 ㉒ – ㉖
CAMERA REC



⑭ IC1900 ㉙,㉚
PB

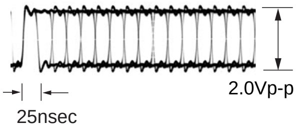


⑮ IC1900 (61)
PB

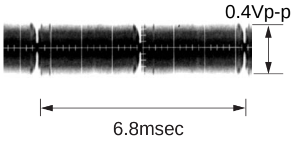


MR-44 BOARD (4/5)

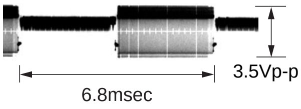
⑯ IC1814 ⑮ – ⑳
PB



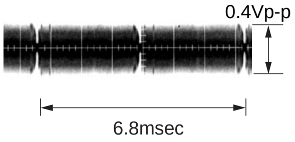
⑰ IC1814 ㊷ PB



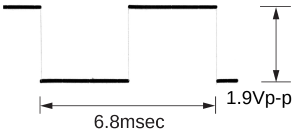
⑱ IC1816 ①,②,⑥,⑦
CAMERA REC



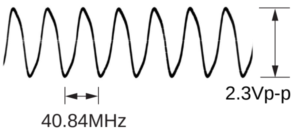
⑲ IC1816 ㉗ PB



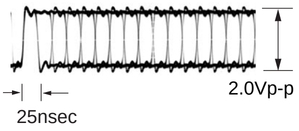
⑳ IC1816 ㉟
CAMERA REC/PB



㉑ IC1816 ㊵
CAMERA REC



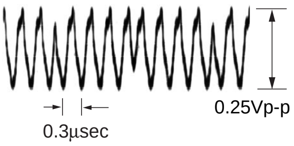
㉒ IC1816 ㊷
CAMERA REC



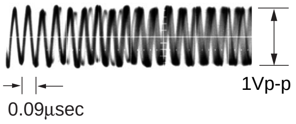
MR-44 BOARD (5/5)

CAMERA REC/PB

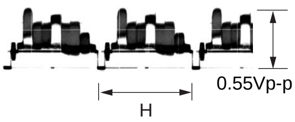
㉓ IC7501 ⑦ (IR ON)



㉔ IC7501 ㉒ (IR ON)



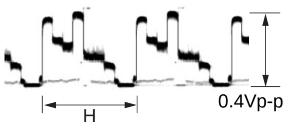
㉕ IC7501 ㊶ (IR ON)



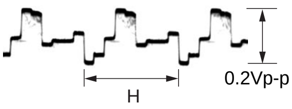
PD-125 BOARD (1/2)

CAMERA REC/PB

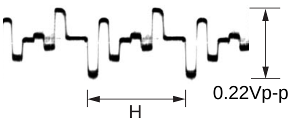
① IC8001 ⑧



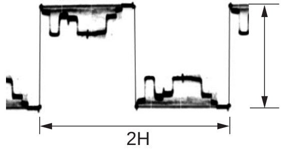
② IC8001 ⑨



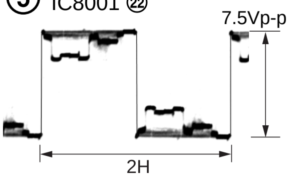
③ IC8001 ⑩



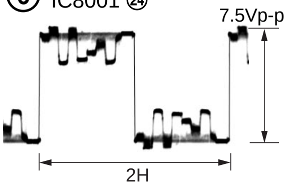
④ IC8001 ⑳



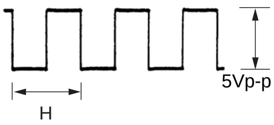
⑤ IC8001 ㉒



⑥ IC8001 ㉔



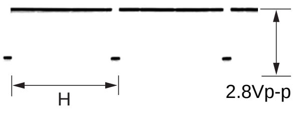
⑦ IC8001 ㊲



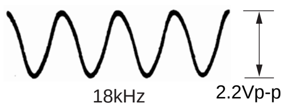
PD-125 BOARD (2/2)

CAMERA REC/PB

⑧ IC8201 ⑳



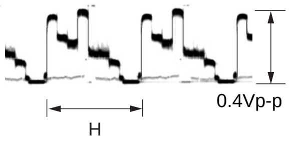
⑨ IC8201 ㉞



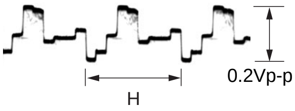
VF-138 BOARD (1/2)

CAMERA REC/PB

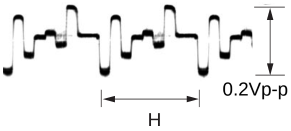
① IC5000 ⑧



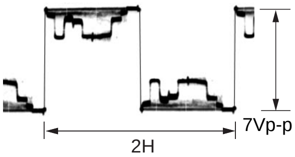
② IC5000 ⑨



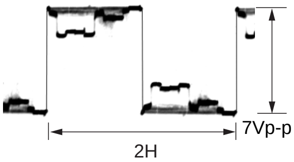
③ IC5000 ⑩



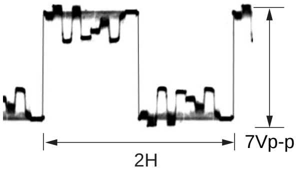
④ IC5000 ⑳



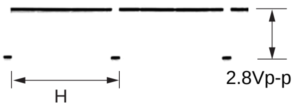
⑤ IC5000 ㉒



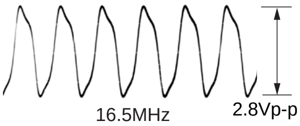
⑥ IC5000 ㉔



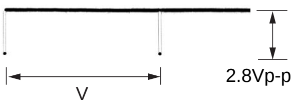
⑦ IC5002 ㉗



⑧ IC5002 ㊶



⑨ IC5002 ㊺



4-4. MOUNTED LOCATION

CD-234 BOARD (SIDE A)

IC101	C-4

CD-234 BOARD (SIDE B)

C101	B-10
C102	C-10
C103	B-11
C104	D-9
C105	C-11
C107	C-11
C109	C-11
C111	C-9
C112	C-11
C113	D-10
C114	C-9
C115	C-11
C116	D-11
C118	C-11
C119	B-11
C121	C-10
C122	B-10
C123	B-10
C125	C-10
C126	C-10
C127	C-10
C128	C-10
C129	C-10
C130	B-10
C131	C-10
C132	C-11
C136	D-10
C137	C-10
C138	B-11
C139	D-10
C171	B-13
C172	B-13
C174	C-10
CN101	A-8
CN171	B-13
D101	C-11
D171	B-13
FB101	D-9
FB102	D-10
FB103	C-10
FB104	B-9
FB105	B-10
FB106	C-9
IC102	C-10
IC103	D-11
IC104	C-10
L101	C-9
L103	B-10
L104	B-10
L105	C-10
L171	B-13
Q101	C-11
Q102	B-11
Q103	C-11
Q104	B-11
R101	C-10
R102	C-11
R103	B-11
R104	C-11
R105	C-11
R110	D-11
R112	D-11
R113	D-11
R114	C-11
R115	C-10
R116	C-11
R120	C-11
R121	C-11
R125	C-11
R126	C-11
R128	C-11
R129	C-11
R130	B-11
R131	C-11
R132	C-11
R133	C-11
R171	B-13
X101	C-11

MR-44 BOARD (SIDE A)

C1804	D-4
C1833	C-4
C1834	C-3
C1837	C-3
C1838	C-3
C1840	C-4
C1844	C-4
C1845	C-4
C1846	C-3
C1847	C-4
C1850	C-3
C1852	C-3
C1854	C-3
C1856	D-4
C1860	D-4
C1869	E-3
C1875	D-4
C1878	C-3
C1881	C-4
C1884	D-4
C1885	D-4
C1886	D-4
C1887	D-4
C1888	C-4
C1889	C-3
C1890	C-4
C1891	C-3
C1901	B-4
C1902	B-4
C1903	B-3
C1904	C-3
C1908	B-3
C1909	B-3
C1910	B-3
C1914	C-3
C1915	C-3
C1933	B-3
C2500	A-3
C2507	A-3
C2565	A-3
C2566	A-3
C2570	B-3
C2572	A-4
C2573	B-4
C2574	A-3
C2575	A-4
C2582	A-4
C2583	A-4
C2585	A-4
C2586	A-4
C2587	A-4
C2588	A-4
C2589	A-3
C7500	E-4
C7501	F-4
C7505	E-3
C7506	E-4
C7534	E-4
CN2303	F-4
F2301	F-3
FB1801	B-4
FB1802	B-4
FB1901	B-3
FB1902	B-4
IC1814	C-4
IC1816	D-3
IC1900	B-3
IC2504	A-3
IC7500	E-4
L1803	B-4
L1808	B-4
L1811	E-4
L2512	B-3
L5211	B-3
LND1800	E-4
LND1801	C-3
LND2303	A-3
Q1810	C-3
Q2302	E-3
Q2303	E-3
Q2304	F-3
Q2505	A-4
Q2506	A-4
Q2507	A-4
R1826	C-3
R1828	C-3
R1834	D-3
R1836	D-3
R1837	D-3
R1838	D-3
R1843	D-3
R1846	D-3
R1848	D-4
R1852	D-4
R1853	D-3
R1855	D-3
R1857	D-3
R1859	D-3
R1866	D-3
R1869	C-3
R1870	C-3
R1871	C-4
R1872	C-3
R1874	C-4
R1875	C-3
R1876	C-3
R1879	C-3
R1909	C-3
R1938	B-4
R1939	C-3
R1940	B-3
R1941	B-3
R2306	E-3
R2307	E-3
R2309	E-3
R2310	F-3
R2311	F-3
R2312	F-3
R2313	F-3
R2314	F-3
R2505	A-3
R2506	A-3
R2507	A-3
R2508	A-3
R2511	A-3
R2517	A-3
R2530	B-3
R2534	A-4
R2569	A-3
R2570	B-4
R2572	B-3
R2573	A-4
R2578	A-4
R2579	A-4
R2582	A-4
R2583	A-4
R2585	A-4
R2587	A-4
R7502	E-4
R7503	E-4
R7504	F-4
R7506	E-4
R7508	E-3
R7531	E-4

MR-44 BOARD (SIDE B)

C2301	F-5
C2302	A-7
C2546	A-5
C2550	A-5
C2551	B-5
C2552	B-5
C2553	A-6
C2554	A-6
C2555	A-6
C2556	A-6
C2557	A-6
C2558	A-6
C2559	A-6
C2561	B-6
C2562	B-7
C2563	A-7
C2564	A-7
C2567	B-6
C2569	B-6
C2576	B-5
C2577	B-6
C2579	B-5
C2590	B-5
C2591	B-5
C7502	D-6
C7503	D-6
C7504	D-6
C7507	D-6
C7508	D-6
C7509	D-6
C7510	D-6
C7511	C-6
C7512	F-5
C7513	C-6
C7514	C-6
C7515	E-5
C7516	C-5
C7517	E-5
C7518	E-5
C7519	C-5
C7520	C-5
C7521	C-5
C7522	E-5
C7523	E-5
C7524	D-5
C7525	D-5
C7526	E-5
C7527	E-5
C7528	D-5
C7529	D-5
C7530	D-5
C7531	F-6
C7532	F-6
C7533	F-6
CN1810	E-6
CN2301	F-8
CN2302	B-5
CN2304	D-6
D230	F-5
D7501	E-6
D7502	E-6
IC2301	F-5
IC2503	B-6
IC2505	C-6
IC7501	D-6
L2301	C-5
L7500	C-6
L7501	C-5
L7502	C-5
L7503	C-5
L7504	F-5
LN2302	F-6
LN2304	A-6
Q2301	A-6
Q7500	D-5
Q7501	D-5
Q7502	F-5
Q7503	F-5
Q7504	F-6
Q7505	F-6
R2303	A-6
R2304	A-6
R2305	F-5
R2308	A-6
R2315	A-6
R2316	A-6
R2509	A-6
R2510	A-6
R2531	A-5
R2532	A-5
R2533	A-5
R2546	A-5
R2547	A-5
R2549	B-5
R2550	B-5
R2551	A-6
R2552	A-6
R2553	A-6
R2554	A-6
R2556	B-6
R2557	B-6
R2558	A-6
R2559	B-6
R2560	B-6
R2564	B-7
R2565	C-7
R2566	B-7
R2567	B-7
R2568	A-7
R2571	B-6
R2574	C-5
R2575	C-5
R2576	C-5
R2577	B-5
R2586	A-5
R2599	A-5
R7500	E-6
R7501	E-6
R7505	E-6
R7507	E-6
R7509	D-6
R7510	E-5
R7511	C-6
R7512	C-6
R7514	C-5
R7516	E-5
R7517	E-5
R7518	D-5
R7519	D-5
R7520	D-5
R7521	E-5
R7522	D-5
R7523	D-5
R7524	D-5
R7525	D-5
R7526	F-5
R7527	F-5
R7528	F-6
R7529	F-6

FJ-25 BOARD (SIDE A)

C912	B-5
C913	B-5
C914	B-5
C915	B-6
C916	B-6
C917	A-6
C919	A-6
D911	A-5
D913	A-4
D916	A-5
D954	B-8
D990	A-2
D991	B-2
D992	B-1
FB956	B-8
FB990	B-2
J950	A-8
J951	A-9
J952	A-10
JL900	E-5
JL905	E-4
JL906	E-5
JL907	E-4
JL908	E-4
JL909	E-4
JL910	B-4
JL911	B-6
JL912	B-6
JL913	B-6
LND910	A-5
LND950	A-7
LND990	B-1
LND991	A-2
Q912	A-4
Q913	A-4
Q914	A-6
Q915	A-6
Q916	A-5
R910	A-5
R912	B-5
R913	A-4
R914	A-4
R915	A-4
R919	A-5
R920	B-6
R921	B-5
R922	A-5
R923	A-5
R924	B-6
R992	B-2
VDR952	B-9

FJ-25 BOARD (SIDE B)

C910	A-15
C911	A-16
C918	B-15
C920	B-11
CN900	E-15
CN910	A-14
CN911	A-16
D910	A-15
D912	B-16
D914	B-16
D915	A-16
D917	A-16
D950	A-10
D951	B-12
D952	B-11
D953	A-12
D955	B-12
F910	A-16
F911	B-15
F912	B-15
F913	B-15
F914	B-15
F915	B-15
FB950	A-10
FB951	B-12
FB952	B-11
FB953	B-11
FB954	B-11
FB955	A-12
FB957	B-12
FB992	A-18
J990	A-19
LF910	A-15
Q910	A-15
Q911	A-15
Q917	B-16
Q918	B-16
R911	A-15
R912	A-15
R917	B-16
R918	B-16
R925	B-16
R950	A-13
R951	A-10
R952	B-12
R953	B-11
R954	B-11
R990	A-19
R991	A-18
VDR950	B-11
VDR951	A-12
VDR953	B-12

MA-367 BOARD (SIDE A)

C450	C-3
C451	C-3
C7303	C-4
C7306	C-4
C7308	C-4
C7310	C-4
C7313	C-4
C7315	C-4
C7317	C-4
C7318	C-4
C7321	C-4
C7322	C-4
C7324	C-3
C7328	C-3
C7329	C-3
C7330	C-3
C7335	C-4
C7345	C-3
C7346	C-3
C7347	C-3
C7351	B-3
C7352	B-3
C7353	C-3
C7354	C-3
D7304	C-4
D7306	C-4
D7307	B-3
D7308	B-3
D7310	C-4
FB7302	C-4
J7301	C-5
L450	C-3
LN7301	C-5
LN7302	B-3
R7311	C-4
R7312	B-4
R7313	C-4
R7315	C-4
R7317	C-4
R7319	C-4
R7320	C-4
R7321	C-3
R7324	C-3
R7328	C-3
R7349	B-3
R7350	B-3
R7351	C-3
R7352	B-4
SE450	C-3
SE451	C-4

MA-367 BOARD (SIDE B)

C 7304	C-8
C 7305	C-7
C 7307	C-7
C 7309	B-7
C 7311	B-8
C 7312	B-7
C 7314	B-7
C 7316	B-7
C 7319	B-7
C 7320	B-7
C 7325	B-8
C 7326	B-8
C 7331	B-8
C 7332	B-8
C 7333	B-8
C 7334	B-6
C 7338	C-8
C 7339	C-8
C 7340	C-8
C 7341	C-8
C 7342	B-8
C 7343	C-8
C 7348	C-8
C 7350	B-8
CN 7300	C-7
CN 7305	A-10
CN 7306	C-8
D 7305	B-6
D 7309	C-7
D 7311	B-6
FB 7301	B-6
FB 7303	C-6
IC 7301	C-8
L 7301	B-8
R 7303	B-8
R7309	C-7
R7310	C-7
R7314	B-7
R7316	B-7
R7318	B-7
R7322	B-8
R7326	B-8
R7327	B-8
R7331	B-8
R7332	C-8
R7342	B-8
R7344	B-8
R7345	B-9
R7347	B-9
R7348	C-8

PD-125 BOARD

C8001	C-1
C8003	D-1
C8005	D-1
C8006	D-1
C8008	C-2
C8009	D-2
C8010	D-2
C8011	D-2
C8012	D-2
C8013	D-1
C8014	D-1
C8015	C-1
C8016	D-1
C8017	D-1
C8018	D-3
C8019	C-2
C8020	C-2
C8021	C-2
C8022	D-2
C8023	D-3
C8024	C-3
C8025	C-3
C8026	C-1
C8027	B-3
C8048	C-1
C8100	C-3
C8101	C-3
C8102	D-3
C8103	C-3
C8104	C-3
C8105	C-3
C8200	C-1
C8201	C-1
C8202	C-2
C8203	B-2
C8204	C-3
C8205	C-1
C8206	C-2
C8207	B-2
C8208	C-3
C8209	C-3
C8210	B-2
C8211	B-2
C8212	B-2
C8213	B-2
C8214	B-2
C8215	C-2
CN8002	B-1
CN8100	D-1
CN8200	B-2
CN8201	D-3
D8100	A-3
D8200	B-1
D8201	B-2
D8201	C-3
IC8001	D-2
IC8200	B-3
IC8201	C-2
IC8202	B-1
L8001	C-2
L8002	C-3
L8100	C-3
L8101	C-3
L8200	B-2
L8201	B-2
L8202	B-3
LND810	D-1
LND812	C-4
LND813	D-4
LND814	B-4
LND815	D-4
LND818	B-4
Q8000	C-1
Q8001	C-1
Q8002	C-1
Q8003	C-2
Q8005	C-3
Q8007	C-3
Q8010	C-3
Q8011	D-3
Q8100	A-4
Q8101	D-3
Q8102	D-3
Q8200	A-1
Q8201	B-1
Q8202	B-1
Q8203	C-3
Q8204	A-3
R8029	D-2
R8000	C-1
R8001	C-1
R8002	C-1
R8003	C-1
R8004	D-1
R8005	D-1
R8006	D-1
R8012	C-2
R8014	D-2
R8015	D-2
R8016	D-2
R8017	D-3
R8018	D-2
R8019	D-1
R8020	D-2
R8021	D-2
R8022	D-3
R8023	D-3
R8024	D-2
R8025	D-2
R8026	D-3
R8027	D-2
R8028	C-2
R8028	C-2
R8030	D-2
R8031	C-2
R8032	C-2
R8033	C-2
R8034	D-3
R8035	D-3
R8036	C-3
R8037	C-3
R8038	C-3
R8039	D-3
R8040	D-2
R8041	D-1
R8042	D-1
R8043	D-1
R8044	D-2
R8045	C-1
R8046	C-1
R8047	C-1
R8049	D-2
R8050	D-2
R8051	D-2
R8052	D-2
R8100	A-3
R8101	D-3
R8102	D-3
R8200	B-1
R8201	C-1
R8202	B-2
R8205	C-2
R8206	C-2
R8207	C-2
R8208	C-3
R8209	A-1
R8210	B-1
R8211	C-3
R8212	B-3
R8213	B-3
R8215	C-2
R8216	C-2
R8217	C-2
R8218	C-2
R8219	B-1
R8220	B-1
R8221	A-1
R8222	B-2
R8223	C-2
R8224	C-3
R8225	C-3
R8226	C-3
R8228	B-3
R8229	B-3
R8230	B-3
R8232	B-2
R8233	B-2
R8234	B-2
R8235	B-2
R8236	B-2
R8237	B-1
R8238	B-2
R8239	A-3
R8240	A-3
R8241	A-3
R8242	B-1
R8243	B-1
R8244	B-3
R8245	B-3
R8246	C-2
R8247	A-1
R8248	A-1
R8249	C-3
R8250	B-3

VF-138 BOARD (SIDE A)

C5000	E-3
C5001	D-3
C5002	D-3
C5003	D-3
C5004	D-3
C5005	D-3
C5006	D-3
C5007	D-3
C5009	D-4
C5010	D-4
C5011	D-4
C5013	E-3
C5014	D-4
C5015	E-4
C5016	E-4
C5029	E-3
C5030	E-4
C5500	D-2
C5501	D-2
C5502	D-2
C5503	D-1
C5504	D-1
CN5001	A-2
CN5501	D-1
CN5502	E-1
IC5000	D-3
IC5001	E-4
L5000	D-3
L5003	E-4
Q5500	D-1
Q5501	D-1
Q5502	D-1
Q5503	D-1
Q5504	D-1
Q5505	D-1
Q5506	D-2
Q5507	D-2
R5001	E-3
R5002	E-3
R5003	E-3
R5005	E-3
R5006	E-3
R5007	D-3
R5008	E-3
R5009	E-3
R5010	E-3
R5011	E-3
R5012	E-3
R5013	E-3
R5014	E-3
R5015	E-3
R5016	D-4
R5017	D-4
R5018	D-4
R5019	D-4
R5020	E-3
R5021	E-3
R5023	D-4
R5035	E-3
R5039	D-4
R5500	D-2
R5501	D-2
R5502	D-1
R5503	D-1
R5504	D-1
R5505	D-1
R5506	D-1
R5507	D-1
R5508	D-1
R5509	D-1
R5510	D-1
R5511	D-2
R5512	D-2
R5513	D-2
R5514	D-1
TH5500	D-1

VF-138 BOARD (SIDE B)

C5017	E-5
C5018	D-5
C5019	E-5
C5020	E-5
C5021	E-5
C5022	D-5
C5024	E-6
C5025	E-6
C5050	D-6
C5051	D-6
C5052	D-6
C5053	D-6
D5000	D-5
IC5002	E-5
IC5003	D-6
L5001	D-6
L5004	D-6
L5006	E-5
Q5001	D-6
Q5002	D-5
Q5050	D-6
Q5051	D-6
Q5052	D-6
Q5053	E-6
R5024	D-5
R5025	D-5
R5026	D-5
R5027	E-5
R5028	E-5
R5029	E-5
R5030	E-5
R5031	D-5
R5032	D-5
R5033	D-5
R5036	D-5
R5038	D-6
R5040	D-6
R5041	D-6
R5042	D-6
R5050	D-6
R5051	D-6
R5052	D-6
R5053	D-6
R5054	D-6
R5055	D-6

SECTION 5
ADJUSTMENTS

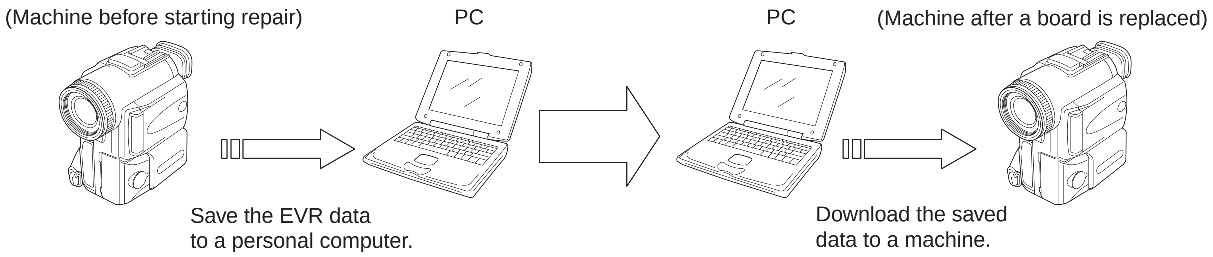
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 when replacing board.

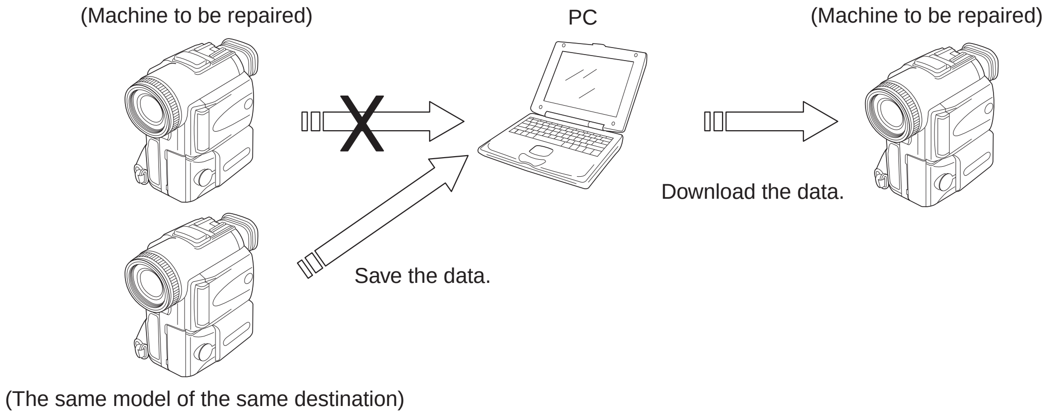
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.


(Machine before starting repair)
PC
PC
(Machine after a board is replaced)
Save the EVR data to a personal computer.
Download the saved data to a machine.

Procedure 2

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.


(Machine to be repaired)
PC
(Machine to be repaired)
X
Download the data.
Save the data.
(The same model of the same destination)

After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 5-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards.

• Adjusting items when replacing main parts

When replacing main parts, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts																					
		Block replacement											Parts replacement										
		Lens device	Mechanism deck	Color EVF block LCD902 (LCD panel)	Color EVF block LED902 (Light guide plate block)	LCD block LCD901 (LCD panel)	LCD block ND901 (Fluorescent tube)	LCD block Inverter unit	Control switch block (FK-4950)	Mechanism deck M901 (Drum assy)	Mechanism deck M902 (Capstan motor)	Mechanism deck LS chassis D3 assy	MA-367 board SE450/451 (YAW/PITCH sensor)	PD-125 board IC8001 (RGB decoder (LCD))	PD-125 board IC8201 (Timing generator (LCD))	VF-138 board IC5000 (RGB decoder (EVF))	VF-138 board IC5002 (Timing generator (EVF))	CD-234 board IC102, X101 (Timing generator)	CD-234 board IC104 (CDS, AGC)	MR-44 board IC1816 (REC/PB AMP)	MR-44 board IC1814 (EQ, A/D CONV., PLL)	MR-44 board IC7501 (IR transmitter)	MR-44 board IC7500 (EVR)
Initialization of B, C, D, E, F, 7 page data	Initialization of C page data																						
	Initialization of D page data																						
	Initialization of B page data																						
	Initialization of E, F, 7 page data																						
	Initialization of F page data																						
Camera	54MHz/66MHz origin oscillation adj.																	●					
	Zoom center adj.								●														
	HALL adj.	●																					
	MR adj.	●																					
	Flange back adj.	●																					
	Color reproduction adj.																		●				
	MAX GAIN adj.																		●				
	AWB & LV standard data input																		●				
	Auto white balance adj.																		●				
	Mechanical shutter data input																						
	Angular velocity sensor sensitivity adj.												●										
Color EVF	VCO adj.																●						
	Bright adj.															●							
	Contrast adj.															●							
	White balance adj.			●	●											●							
LCD	VCO adj.														●								
	Black limit adj.													●									
	Bright adj.													●									
	GAMMA 1 adj.													●									
	Contrast adj.													●									
	Center level adj.													●									
	White balance adj.					●	●	●						●									
System control	Serial No. input																						
Servo, RF	Cap FG duty adj.		●								●												
	T reel FG duty adj.		●									●											
	Switching position adj.		●							●													
	AGC center level adj.		●							●										●	●		
	APC & AEQ adj.		●							●										●	●		
	PLL f_0 & LPF f_0 adj.		●							●										●	●		
Video	Chroma BPF f_0 adj.																						
	S VIDEO OUT Y level adj.																						
	S VIDEO OUT Cr, Cb level adj.																						
	PLL adj.																						●
IR	IR video carrier frequency adj.																					●	●
	IR video deviation adj.																					●	●
	IR audio deviation adj.																					●	●
Mechanism	Tape path adj.		●							●	●	●											

Table. 5-1-1(1).

• Adjusting items when replacing a board

When replacing a board, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts					
		Board replacement					
		CD-234 board (COMPLETE)	VC-227 board (COMPLETE)	MA-367 board (COMPLETE)	MR-44 board (COMPLETE)	PD-125 board (COMPLETE)	VF-138 board (COMPLETE)
Initialization of B, C, D, E, F, 7 page data	Initialization of C page data		●				
	Initialization of D page data		●				
	Initialization of B page data		●				
	Initialization of E, F, 7 page data		●				
	Initialization of F page data		●				
Camera	54MHz/66MHz origin oscillation adj.	●	●				
	Zoom center adj.		●				
	HALL adj.		●				
	MR adj.	●	●				
	Flange back adj.	●	●				
	Color reproduction adj.	●	●				
	MAX GAIN adj.	●	●				
	AWB & LV standard data input	●	●				
	Auto white balance adj.	●	●				
	Mechanical shutter data input		●				
	Angular velocity sensor sensitivity adj.		●	●			
Color EVF	VCO adj.		●				●
	Bright adj.		●				●
	Contrast adj.		●				●
	White balance adj.		●				●
LCD	VCO adj.		●			●	
	Black limit adj.		●			●	
	Bright adj.		●			●	
	GAMMA 1 adj.		●			●	
	Contrast adj.		●			●	
	Center level adj.		●			●	
	White balance adj.		●			●	
System control	Serial No. input		●				
Servo, RF	Cap FG duty adj.		●				
	T reel FG duty adj.		●				
	Switching position adj.		●				
	AGC center level adj.		●		●		
	APC & AEQ adj.		●		●		
	PLL f_0 & LPF f_0 adj.		●		●		
Video	Chroma BPF f_0 adj.		●				
	S VIDEO OUT Y level adj.		●				
	S VIDEO OUT Cr, Cb level adj.		●				
	PLL adj.		●		●		
IR	IR video carrier frequency adj.		●		●		
	IR video deviation adj.		●		●		
	IR audio deviation adj.		●		●		
Mechanism	Tape path adj.						

Table. 5-1-1(2).

Ver 1.1 2000. 02

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Regulated power supply
- Color monitor
- Digital voltmeter
- Vectorscope

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded). (Note 1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-8 jig	J-6082-388-A	For adjusting the video section For adjusting the color viewfinder
J-9	IR receiver jig	J-6082-383-A	For adjusting the IR transmitter
J-10	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera table	J-6082-384-A	For adjusting the flange back

Note1: If the microprocessor IC in the adjustment remote commander is not the new microprocessor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new microprocessor (8-759-148-35).

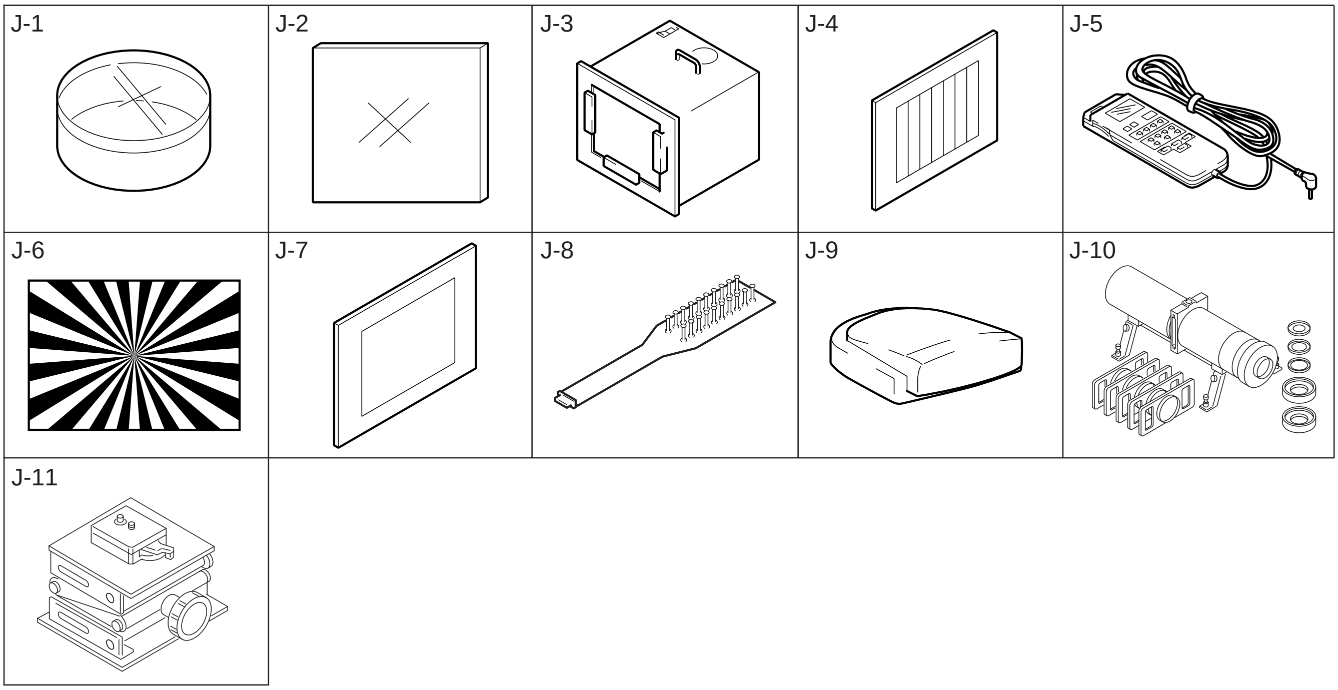

J-1
J-2
J-3
J-4
J-5
J-6
J-7
J-8
J-9
J-10
J-11

Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-3.

Note 3: As removing the cabinet (L) (removing CN1051 of the control switch block (FK-4950)) means removing the lithium 3V power supply (BT1050), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (L) has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data and the data on history use (data of page: 2, address: A2 to AA). (Refer to "SELF-DIAGNOSIS FUNCTION" for the self-diagnosis data, and to "5-4.Service Mode" for the data on the history use.)

Note 4: Setting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the camera power to be turned on with the cabinet (L) removed (with the control switch block (FK-4950) removed). After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note 5: Exiting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

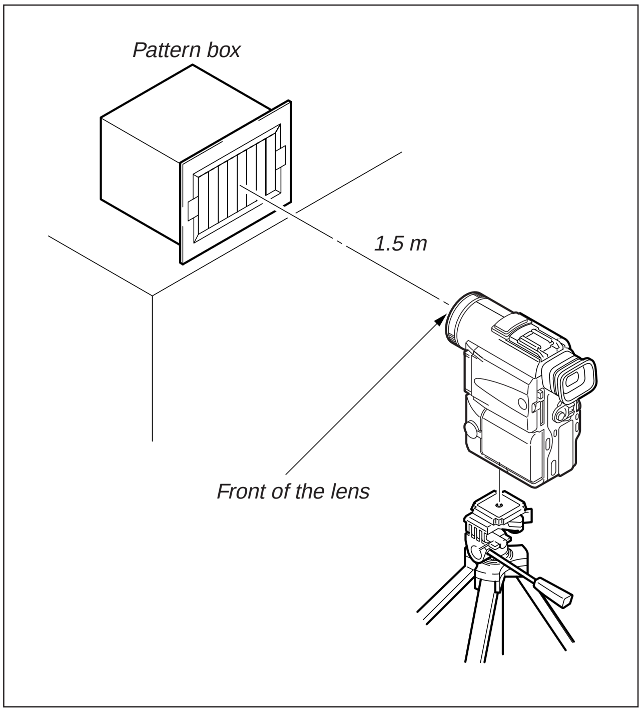


Fig. 5-1-2

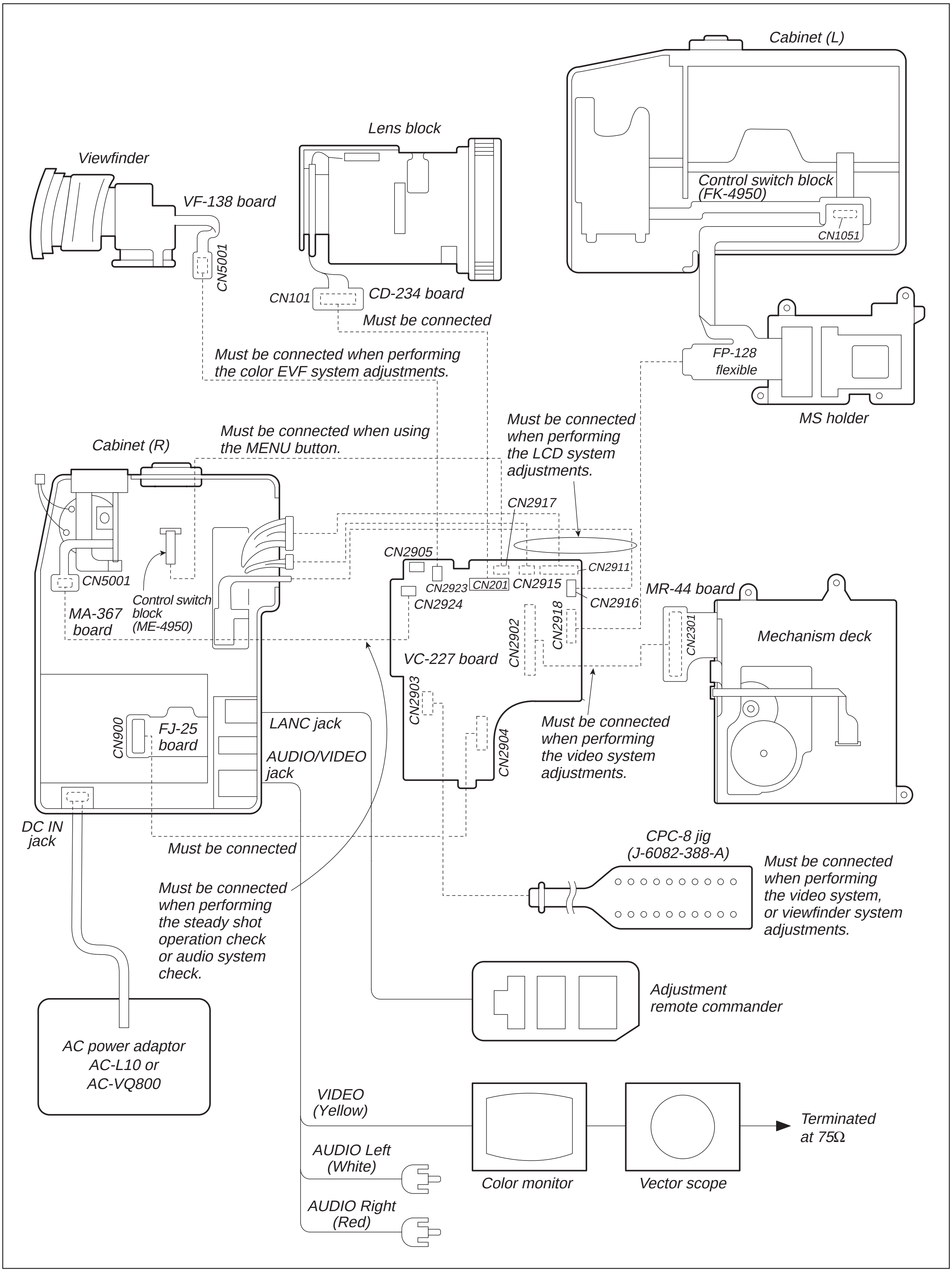

Cabinet (L)
Lens block
Viewfinder
VF-138 board
CN5001
Control switch block
(FK-4950)
CN1051
CN101
CD-234 board
Must be connected
Must be connected when performing
the color EVF system adjustments.
FP-128
flexible
MS holder
Must be connected
when performing
the LCD system
adjustments.
Must be connected when using
the MENU button.
Cabinet (R)
CN2917
CN2905
CN2911
CN2923
CN201
CN2915
CN5001
CN2916
MR-44 board
CN2924
Control switch
block
(ME-4950)
MA-367
board
CN2918
CN2902
CN2301
Mechanism deck
VC-227 board
CN2903
CN900
FJ-25
board
LANC jack
AUDIO/VIDEO
jack
CN2904
Must be connected
when performing
the video system
adjustments.
DC IN
jack
Must be connected
CPC-8 jig
(J-6082-388-A)
Must be connected
when performing
the video system,
or viewfinder system
adjustments.
Must be connected
when performing
the steady shot
operation check
or audio system
check.
Adjustment
remote commander
AC power adaptor
AC-L10 or
AC-VQ800
VIDEO
(Yellow)
Terminated
at 75Ω
AUDIO Left
(White)
Color monitor
Vector scope
AUDIO Right
(Red)

Fig. 5-1-3

1-1-3. Precaution

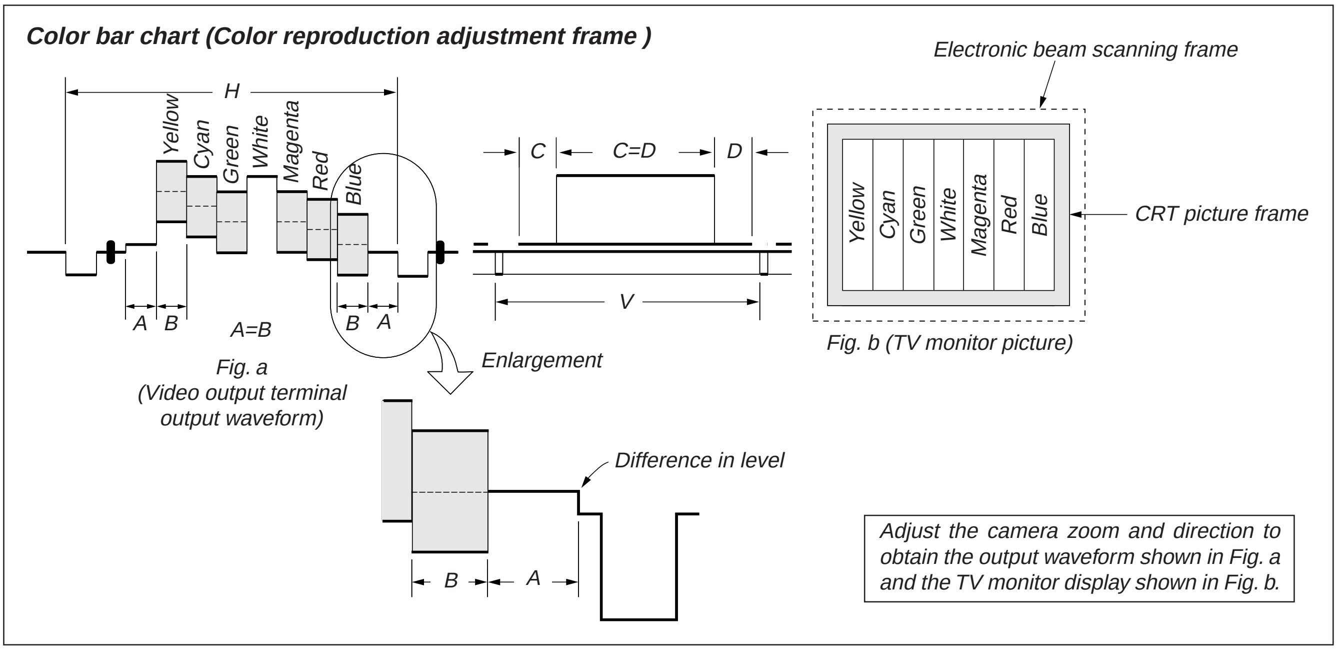
1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER switch (FK-4950 block) .... CAMERA
2. NIGHT SHOT switch (Lens block) .... OFF
3. DEMO MODE (Menu setting) .... OFF
4. DIGITAL ZOOM (Menu setting) .... OFF
5. STEADY SHOT (Menu setting) .... OFF
6. PROGRAM AE (Menu setting) .... AUTO
7. WHITE BALANCE (Menu setting) .... AUTO
8. 16 : 9 WIDE (Menu setting) .... OFF
9. PICTURE EFFECT (Menu setting) .... OFF
10. DISPLAY (Menu setting) .... V-OUT/LCD
11. DISPLAY (ME-4950 block) .... ON
12. FOCUS switch (FK-4950 block) .... MANUAL
13. DIGITAL EFFECT (ME-4950 block) .... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.


Color bar chart (Color reproduction adjustment frame)

H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A
Fig. a
(Video output terminal
output waveform)
Enlargement
C
C=D
D
V
Electronic beam scanning frame
Yellow
Cyan
Green
White
Magenta
Red
Blue
CRT picture frame
Fig. b (TV monitor picture)
Difference in level
B
A

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the TV monitor display shown in Fig. b.

Fig.5-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

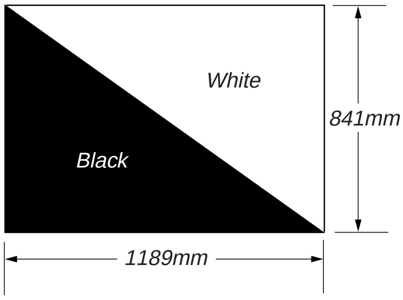

White
Black
841mm
1189mm

Fig. 5-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF B, C, D, E, F, 7 PAGE DATA

1-2-1. INITIALIZATION OF C PAGE DATA

1. Initializing the C Page Data

Note: If the C page data has been initialized, the following adjustments need to be performed again.
1) Modification of C page data
2) Serial No. input
3) Servo and RF system adjustments
4) Video system adjustments
5) IR transmitter adjustments

Adjusting page	C
Adjusting Address	10 to DF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 80, set data: 0C, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 80, and check that the data changes to "1C".
4) Perform "Modification of C Page Data".

2. Modification of C Page Data

If the C page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of C Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. C Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the C Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of C Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	EE	EE	Switching position adj.
11	00	00	
12	EE	EE	
13	00	00	
14			Fixed data-1
15			(Initialized data)
16	E0	E0	Cap FG duty adj.
17	E0	E0	T reel FG duty adj.
18	2A	2A	AEQ adj.
19	2A	2A	
1A			Fixed data-1
1B	33	33	AEQ adj.
1C	33	33	
1D			Fixed data-1
1E	25	25	AGC center level adj.
1F	3E	3E	PLL f_0 adj.
20	3E	3E	
21	DC	DC	APC adj.
22	99	99	LPF f_0 adj.
23			Fixed data-1
24			(Initialized data)
25	88	88	S VIDEO out Y level adj.
26	E3	E3	S VIDEO out Cr level adj.
27	A1	A1	S VIDEO out Cb level adj.
28	8A	8A	IR video carrier freq. Adj.
29	2D	2D	IR video deviation Adj.
2A	52	52	IR audio deviation Adj.
2B	04	04	Chroma BPF f_0 adj.
2C	08	08	Serial No. input
2D	00	00	
2E	46	46	
2F	01	01	
30	01	01	
31	00	00	
32	00	00	
33	00	00	
34			Fixed data-2
35			Fixed data-1
36			(Initialized data)
37			
38	00	00	Emergency memory address
39	00	00	
3A	00	00	
3B	00	00	
3C	00	00	
3D	00	00	
3E	00	00	
3F	00	00	
40	00	00	

Address	Initial value		Remark
	NTSC	PAL	
41	00	00	Emergency memory address
42	00	00	
43	00	00	
44			Fixed data-1 (Initialized data)
45			
46			
47	20	20	PLL f_0 fine adj.
48			Fixed data-1 (Initialized data)
49			
4A			
4B			
4C			
4D			
4E			
4F			
50			Fixed data-2
51			Fixed data-1 (Initialized data)
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			Fixed data-2
5E			Fixed data-1 (Initialized data)
5F			
60			
61			Fixed data-2
62			Fixed data-1 (Initialized data)
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			Fixed data-2
70			Fixed data-1 (Initialized data)
71			
72			
73	03	03	APC adj.
74			Fixed data-1 (Initialized data)
75			
76			
77			

Address	Initial value		Remark
	NTSC	PAL	
78			Fixed data-1 (Initialized data)
79			
7A			
7B			
7C			
7D			
7E			Fixed data-2 (Modified data. Copy the data built in the same model.)
7F			
80			
81			Fixed data-1 (Initialized data)
82			
83			
84			
85			
86			
87			Fixed data-2 (Modified data. Copy the data built in the same model.)
88			
89			
8A			
8B			Fixed data-1 (Initialized data)
8C			
8D			
8E			
8F			Fixed data-2
90			Fixed data-1 (Initialized data)
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			Fixed data-2
A4			Fixed data-1 (Initialized data)
A5			
A6			
A7			
A8			
A9			
AA	80	80	PLL adj.
AB			Fixed data-1 (Initialized data)
AC			
AD			
AE			

Address	Initial value		Remark
	NTSC	PAL	
AF			Fixed data-1 (Initialized data)
B0			
B1			
B2			Fixed data-2
B3			Fixed data-1 (Initialized data)
B4			
B5			Fixed data-2 (Modified data. Copy the data built in the same model.)
B6			
B7			Fixed data-1 (Initialized data)
B8			
B9			
BA			
BB			
BC			Fixed data-2 (Modified data. Copy the data built in the same model.)
BD			
BE			
BF			Fixed data-1 (Initialized data)
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			

Table. 5-1-2.

1-2-2. INITIALIZATION OF D PAGE DATA

1. Initializing the D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data
2) Color viewfinder system adjustments
3) LCD system Adjustments

Adjusting page	D
Adjusting Address	10 to 9F

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 80, set data: 0D, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 80, and check that the data changes to “1D”.
4) Perform “Modification of D Page Data”.

2. Modification of D Page Data

If the D page data has been initialized, change the data of the “Fixed data-2” address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

Note: If the following symptoms occur after completing of the “Modification of D page data”, check that the data of the “Fixed data-2” addresses are same as those of the same model of the same destination.
1) The battery end mark on the LCD or viewfinder screen is flashing.
2) The power is shut off so that unit cannot operate.

3. D Page Table

Note1: Fixed data-1 : Initialized data. (Refer to “1. Initializing the D Page Data”.)
Fixed data-2 : Modified data. (Refer to “2. Modification of D Page Data”.)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11			Fixed data-1 (Initialized data)
12			
13			Fixed data-2 (Modified data. Copy the data built in the same model.)
14			
15			
16			Fixed data-1 (Initialized data)
17			
18			
19			
1A			Fixed data-2 (Modified data. Copy the data built in the same model.)
1B			
1C			Fixed data-1
1D			Fixed data-2
1E			Fixed data-1
1F			Fixed data-2 (Modified data. Copy the data built in the same model.)
20			
21			
22			Fixed data-1 (Initialized data)
23			
24			
25			Fixed data-2
26			Fixed data-1 (Initialized data)
27			
28			Fixed data-2
29			Fixed data-1
2A			Fixed data-2
2B			
2C			Fixed data-1
2D			Fixed data-2 (Modified data. Copy the data built in the same model.)
2E			
2F			
30			Fixed data-1 (Initialized data)
31			
32			
33			
34			
35			
36			
37			
38			Fixed data-2 (Modified data. Copy the data built in the same model.)
39			
3A			
3B			
3C			
3D			
3E			
3F			Fixed data-1
40			Fixed data-2 (Modified data. Copy the data built in the same model.)
41			
42			
43			
44			
45			Fixed data-1 (Initialized data)
46			
47			
48			
49			
4A			
4B			
4C			Fixed data-2 (Modified data. Copy the data built in the same model.)
4D			
4E			
4F			Fixed data-1 (Initialized data)
50			
51			
52			
53			
54			
55			
56			
57			
58			Fixed data-2 (Modified data. Copy the data built in the same model.)
59			
5A			
5B			
5C			
5D			Fixed data-1 (Initialized data)
5E			
5F			
60			
61			
62			
63			
64			
65			Fixed data-2
66			Fixed data-1 (Initialized data)
67			
68			
69			
6A			Fixed data-2 (Modified data. Copy the data built in the same model.)
6B			
6C			
6D			Fixed data-1
6E			Fixed data-2 (Modified data. Copy the data built in the same model.)
6F			
70			
71	A6	A6	White balance adj.(EVF)
72	A2	A2	
73			Fixed data-2 (Modified data. Copy the data built in the same model.)
74			
75	80	80	VCO adj.(EVF)

Address	Initial value		Remark
	NTSC	PAL	
76			Fixed data-2
77			Fixed data-1
78			Fixed data-2 (Modified data. Copy the data built in the same model.)
79			
7A	90	90	Bright adj.(EVF)
7B	80	80	Contrast adj.(EVF)
7C			Fixed data-1 (Initialized data)
7D			
7E			
7F			
80	9E	9E	White balance adj.(LCD)
81	80	80	
82	74	74	Black limit adj.(LCD)
83	88	88	Gamma1 adj.(LCD)
84	70	70	VCO adj.(LCD)
85	88	88	Center level adj.(LCD)
86			Fixed data-1
87			Fixed data-2 (Modified data. Copy the data built in the same model.)
88			
89			
8A	90	90	Bright adj.(LCD)
8B			Fixed data-2
8C	B7	B7	Contrast adj.(LCD)
8D			Fixed data-2
8E			
8F			Fixed data-1
90			Fixed data-2
91			Fixed data-1 (Initialized data)
92			
93			
94			Fixed data-2 (Modified data. Copy the data built in the same model.)
95			
96			
97			
98			Fixed data-1 (Initialized data)
99			
9A			
9B			
9C			
9D			
9E			Fixed data-2
9F			Fixed data-1

Table. 5-1-3.

1-2-3. INITIALIZATION OF B PAGE DATA

Note: When reading the B page data, insert a “Memory Stick” into the “Memory Stick” slot.

Switch setting

POWER .... MEMORY

1. Initializing the B Page Data

Note: If the B page data has been initialized, the following adjustments need to be performed again.
1) Modification of B page data

Adjusting page	B
Adjusting Address	00 to FF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 8F, set data: 03, and press the PAUSE button.
3) Select page: 2, address: 8F, set data: 02, and press the PAUSE button.
4) Select page: 2, address: 8F, set data: 00, and press the PAUSE button.
5) Select page: 5, address: 01, set data: F3, and press the PAUSE button.
6) Select page: 5, address: 00, set data: 01, and press the PAUSE button.
7) Select page: 5, address: 01, and wait for three seconds.
8) Select page: 5, address: 00, and check that the data is “00”.
9) Select page: 5, address: 02, and check that the data is “00”.
10) Perform “Modification of B Page Data”.

2. Modification of B Page Data

If the B page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Processing before Modification of B Page data

1) Select page: 2, address: 8F, set data: 03, and press the PAUSE button.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of B Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. B Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B Page Data".)

Address	Remark
00 to F9	Fixed data-1 (Initialized data)
FA	Fixed data-2 (Modified data. Copy the data built in the same model.)
FB to FF	Fixed data-1 (Initialized data)

Table. 5-1-4.

1-2-4. INITIALIZATION OF E, F, 7 PAGE DATA

Switch setting

POWER .... CAMERA

1. Initializing the E, F, 7 Page Data

Note: If the E, F, 7 page data has been initialized, following adjustments need to be performed again.
1) Modification of E, F, 7 page data
2) Camera system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	7
Adjusting Address	00 to 4D (Note1) 00 to 67 (Note2)

Note1: For the camera microprocessor ver. 1.0 or ver. 2.0.
Note2: For the camera microprocessor ver. 3.0 or later.
Note3: Refer to "3. Modification of F Page Data" for the camera microprocessor version.

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, and set data: 2D (NTSC) or data: 2F (PAL): and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 03, set data: 01, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 02, and check that the data is "01".
5) Perform "Modification of E, F, 7 Page Data" and "Modification of F Page Data".

2. Modification of E, F, 7 Page Data

If the E, F, 7 page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

3. Modification of F Page Data

Adjusting page	F
Adjusting Address	24 to 27, 29 to 2D, 8F, BC

Modifying Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: FF, and check the data.
   (Version check of the camera microprocessor (VC-227 board IC302))

Data	Version
01	1.0
02	2.0
03	3.0

3) If the data is "02" or "03", input the following data to each address of F page.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
24	80
25	80
26	80
27	80
29	80
2A	80
2B	80
2C	80
2D	08
8F	40
BC	10

4) Select page: 0, address: 01, and set data: 00.

Processing after Completing Modification of F Page data

1) Turn off the power and turn on again.

4. F Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 7 Page Data").
Fixed data-3: Modified data. (Refer to "3. Modification of F Page Data").

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10			Fixed data-1 (Initialized data)
11			
12	80	80	54MHz/66MHz origin osc. adj.
13	80	80	Zoom center adj.
14			Fixed data-1 (Initialized data)
15			
16			
17	81	81	HALL adj.
18	5D	5D	
19	17	17	
1A	70	70	
1B	62	62	
1C	8D	8D	
1D	9A	9A	Max gain adj.
1E	80	80	AWB & LV standard data input
1F	7A	7A	
20			Fixed data-1 (Initialized data)
21			
22			
23			
24			Fixed data-3 (Refer to "3. Modification of F Page Data")
25			
26			
27			
28			Fixed data-1
29			Fixed data-3 (Refer to "3. Modification of F Page Data")
2A			
2B			
2C			
2D			
2E			Fixed data-1 (Initialized data)
2F			
30	90	90	AWB & LV standard data input
31	3E	3E	
32	43	43	
33	59	59	
34			Fixed data-1
35	22	22	Color reproduction adj.
36			Fixed data-1
37	27	24	Color reproduction adj.
38			Fixed data-1 (Initialized data)
39			
3A			
3B			
3C	00	00	Color reproduction adj.
3D	F1	EF	
3E			Fixed data-1 (Initialized data)
3F			

Address	Initial value		Remark
	NTSC	PAL	
40	80	80	Auto white balance adj.
41	40	40	
42			Fixed data-1 (Initialized data)
43			
44			
45			
46			
47			
48			
49			
4A	79	79	Flange back adj.
4B	4E	4E	
4C	33	33	
4D	4C	4C	
4E	81	81	
4F	20	20	
50	80	80	MR adj.
51	80	80	
52	40	40	
53	C0	C0	
54	40	40	
55	C0	C0	
56	40	40	
57	C0	C0	
58	40	40	
59	C0	C0	
5A	46	46	Flange back adj.
5B	00	00	
5C	19	19	
5D	00	00	
5E	1B	1B	
5F	00	00	
60	00	00	
61	00	00	
62	00	00	
63			Fixed data-1 (Initialized data)
64			
65			
66	50	63	Angular velocity sensor sensitivity adj.
67	50	63	
68			Fixed data-1 (Initialized data)
69			
6A			
6B			
6C			
6D			
6E			
6F			
70	45	45	Mechanical shutter data input.
71	0D	0D	
72	E3	E3	
73	09	09	
74	88	88	
75	08	08	
76	84	84	

Address	Initial value		Remark
	NTSC	PAL	
77	07	07	Mechanical shutter data input.
78	80	80	
79	06	06	
7A	00	00	
7B	46	46	
7C	55	55	
7D	41	41	
7E	AA	AA	
7F	48	48	
80	00	00	
81	48	48	
82	00	00	
83	3F	3F	
84	1A	1A	
85			Fixed data-1 (Initialized data)
86			
87			
88			
89			
8A			
8B			
8C	00	00	Max gain adj.
8D			Fixed data-1
8E			Fixed data-2
8F			Fixed data-3 (Refer to “3. Modification of F Page Data”)
90			Fixed data-1 (Initialized data)
91			
92			
93			Fixed data-2 (Modified data. Copy the data built in the same model.)
94			
95			Fixed data-1 (Initialized data)
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E	70	70	Max gain adj.
9F	70	70	
A0			Fixed data-1 (Initialized data)
A1			
A2			
A3			
A4			
A5			Fixed data-2
A6			Fixed data-1 (Initialized data)
A7			
A8			
A9			
AA			
AB			

Address	Initial value		Remark
	NTSC	PAL	
AC			Fixed data-1 (Initialized data)
AD			
AE			
AF			
B0			
B1			Fixed data-2
B2			Fixed data-1
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			Fixed data-3 (Refer to “3. Modification of F Page Data”)
BD			Fixed data-1 (Initialized data)
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			Fixed data-2
C8			Fixed data-1
C9			
CA			Fixed data-2
CB			Fixed data-1 (Initialized data)
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			Fixed data-2
D4			Fixed data-1 (Initialized data)
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0			
E1			
E2			Fixed data-1 (Initialized data)
E3			
E4			
E5			
E6			
E7			
E8			
E9			
EA			
EB			
EC			Fixed data-2 (Modified data. Copy the data built in the same model.)
ED			
EE			Fixed data-1 (Initialized data)
EF			
F0			
F1			
F2			
F3			
F4			
F5			
F6			
F7			
F8			
F9			
FA			
FB			
FC			
FD			
FE			
FF			

Table. 5-1-5.

5. E Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 7 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 7 Page Data”.)

Address	Remark
00	Fixed data-1 (Initialized data)
01	
02	
03	
04	
05	
06	
07	
08	
09	
0A	
0B	
0C	
0D	
0E	
0F	
10	Fixed data-2
11	Fixed data-1 (Initialized data)
12	Fixed data-2
13	Fixed data-1 (Initialized data)
14	
15	
16	
17	
18	
19	
1A	
1B	
1C	
1D	Fixed data-2 (Modified data. Copy the data built in the same model.)
1E	
1F	
20	Fixed data-1 (Initialized data)
21	
22	
23	Fixed data-2
24	Fixed data-1 (Initialized data)
25	
26	
27	
28	
29	
2A	
2B	
2C	
2D	
2E	
2F	
30	
31	
32	
33	Fixed data-2 (Modified data. Copy the data built in the same model.)
34	
35	
36	
37	
38	
39	
3A	
3B	Fixed data-1 (Initialized data)
3C	
3D	
3E	
3F	
40	
41	Fixed data-2
42	Fixed data-1 (Initialized data)
43	
44	
45	
46	
47	
48	
49	
4A	
4B	Fixed data-2 (Modified data. Copy the data built in the same model.)
4C	
4D	
4E	Fixed data-1 (Initialized data)
4F	
50	Fixed data-2
51	Fixed data-1 (Initialized data)
52	
53	
54	
55	
56	
57	
58	
59	
5A	
5B	
5C	
5D	
5E	
5F	
60	
61	
62	
63	
64	Fixed data-2
65	Fixed data-1 (Initialized data)
66	
67	
68	
69	
6A	

Address	Remark
6B	Fixed data-1 (Initialized data)
6C	Fixed data-2 (Modified data. Copy the data built in the same model.)
6D	
6E	Fixed data-1 (Initialized data)
6F	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
7A	
7B	
7C	
7D	
7E	
7F	
80	
81	
82	
83	Fixed data-2
84	Fixed data-1 (Initialized data)
85	
86	
87	
88	
89	
8A	
8B	
8C	
8D	
8E	
8F	
90	Fixed data-2 (Modified data. Copy the data built in the same model.)
91	
92	
93	Fixed data-1
94	Fixed data-2
95	Fixed data-1 (Initialized data)
96	
97	
98	Fixed data-2 (Modified data. Copy the data built in the same model.)
99	
9A	
9B	
9C	Fixed data-1 (Initialized data)
9D	
9E	Fixed data-2 (Modified data. Copy the data built in the same model.)
9F	
A0	
A1	Fixed data-1

Address	Remark
A2	Fixed data-2 (Modified data. Copy the data built in the same model.)
A3	
A4	Fixed data-1 (Initialized data)
A5	
A6	
A7	
A8	
A9	Fixed data-2
AA	Fixed data-1
AB	Fixed data-2
AC	Fixed data-1 (Initialized data)
AD	
AE	
AF	
B0	Fixed data-2 (Modified data. Copy the data built in the same model.)
B1	
B2	
B3	
B4	
B5	
B6	
B7	
B8	Fixed data-1 (Initialized data)
B9	
BA	
BB	
BC	
BD	
BE	
BF	
C0	
C1	
C2	
C3	
C4	
C5	
C6	
C7	
C8	
C9	Fixed data-2 (Modified data. Copy the data built in the same model.)
CA	
CB	Fixed data-1 (Initialized data)
CC	
CD	
CE	
CF	
D0	
D1	
D2	
D3	
D4	
D5	
D6	
D7	

Address	Remark
D8	Fixed data-1 (Initialized data)
D9	
DA	
DB	
DC	Fixed data-2 (Modified data. Copy the data built in the same model.)
DD	
DE	Fixed data-1 (Initialized data)
DF	
E0	
E1	
E2	
E3	
E4	
E5	
E6	
E7	
E8	
E9	
EA	
EB	
EC	Fixed data-2 (Modified data. Copy the data built in the same model.)
ED	
EE	Fixed data-1 (Initialized data)
EF	
F0	
F1	
F2	Fixed data-2
F3	Fixed data-1 (Initialized data)
F4	
F5	
F6	
F7	
F8	
F9	
FA	
FB	
FC	
FD	
FE	
FF	

Table. 5-1-6.

6. 7 Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 7 Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00			Fixed data-2 (Modified data. Copy the data built in the same model.)
01 to 03			Fixed data-1 (Initialized data)
04 to 08			Fixed data-2 (Modified data. Copy the data built in the same model.)
09 to 19			Fixed data-1 (Initialized data)
1A to 1C			Fixed data-2 (Modified data. Copy the data built in the same model.)
1D to 27			Fixed data-1 (Initialized data)
28 to 2C			Fixed data-2 (Modified data. Copy the data built in the same model.)
2D to 34			Fixed data-1 (Initialized data)
35			Fixed data-2 (Modified data. Copy the data built in the same model.)
36 to 3F			Fixed data-1 (Initialized data)
40 to 45			Fixed data-2 (Modified data. Copy the data built in the same model.)
46 to 4D			Fixed data-1 (Initialized data)
4E	00	00	Fixed data-1 (Initialized data)
4F	00	00	
50	1E	1E	Addresses 4E to 67 are only for the camera microprocessor ver. 3.0 or later. **Note:** When replaced a camera microprocessor version 1.0 or 2.0 with a camera microprocessor version 3.0 or later, input the initial value to address: 4E to 67. Refer to "3. Modification of F Page Data" for the camera microprocessor version. **Input Method:** 1) Select page: 0, address: 01, and set data: 01. 2) Input the initial value to address: 4E to 67. **Note:** Press the PAUSE button of the adjustment remote commander each time to set the data.
51	18	18	
52	18	18	
53	19	19	
54	10	10	
55	10	10	
56	10	10	
57	10	10	
58	19	19	
59	15	15	
5A	15	15	
5B	16	16	
5C	10	10	
5D	10	10	
5E	10	10	
5F	10	10	
60	05	05	
61	05	05	

Address	**Initial value**		**Remark**
	NTSC	PAL	
62	05	05	3) Select page: 0, address: 01, and set data: 00.
63	05	05	
64	3C	3C	
65	3C	3C	
66	3C	3C	
67	3C	3C	

Table. 5-1-7.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

1. 54MHz/66MHz Origin Oscillation Adjustment (CD-234 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Subject	Not required
Measurement Point	Pin ⑯ of IC201 of VC-227 board or pin ㉓ of IC404 of VC-227 board
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	12
Specified Value	Pin ⑯ of IC201 of VC-227 board : f=33000000 ± 165Hz (NTSC) f=27000000 ± 134Hz (PAL) Pin ㉓ of IC404 of VC-227 board: f=13500000 ± 68Hz

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 12, change the data and set the clock frequency (f) to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

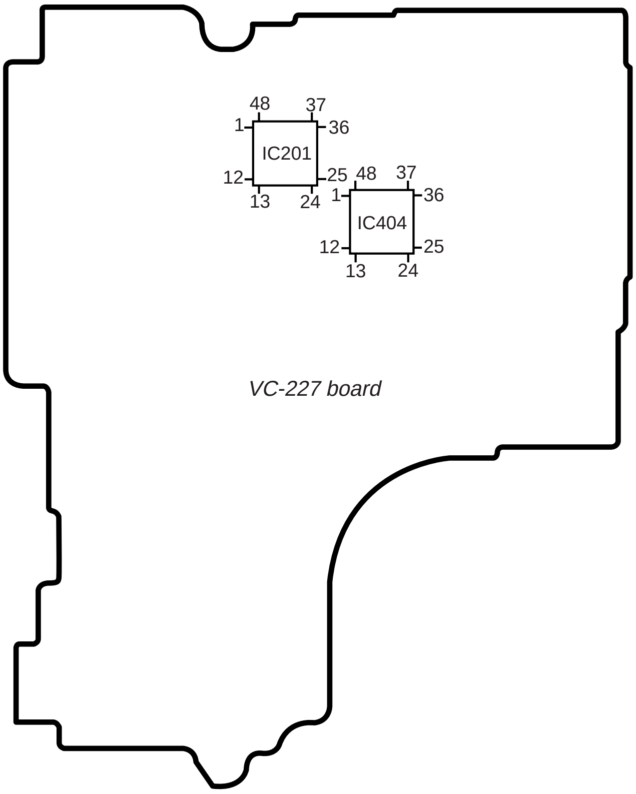


Fig. 5-1-6

2. Zoom Key Center Adjustment

Set the A/D value center of the microprocessor to the center voltage of the zoom key.
If deviated, the zoom lens operates of itself, even if the zoom key is the center position.

Subject	Not required
Measurement Point	Display data of page: 6, address: 50
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	13

Note: Don't touch the zoom lever during adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 50, read the data, and this data is named D_{50}.
3) Select page: F, address: 13, set data: D_{50}.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 0, address: 01, and set data: 00.

3. HALL Adjustment

For detecting the position of the lens iris and ND filter, adjust each AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	17, 18, 19, 1A, 1B, 1C
Specified Value	When the data of page: 6, address: 01 is “01”: 15 to 19 (Note2) When the data of page: 6, address: 01 is “03”: 87 to 8B (Note2) When the data of page: 6, address: 01 is “69”: 87 to 8B (Note2) When the data of page: 6, address: 01 is “6B”: 15 to 19 (Note2)

Note1: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX
Display data

Note2: The PAUSE button of the Adjustment remote commander must be pressed.

Switch setting:

POWER .... CAMERA

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 94, and set data: 17.
3) Select page: 6, address: 95, and set data: 89.
4) Select page: 6, address: 01, set data: 6D, and press the PAUSE button of the adjustment remote commander. (The HALL adjustment is performed and the adjustment data is stored in page: F, address: 17 to 1C.)
5) Select page: 6, address: 02, and check that the data is “01”.
6) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 10, set data: 39, and press the PAUSE button.
3) Select page: 6, address: 01, set data: 01, and press the PAUSE button.
4) Select page: 1, and check that the display data (Note1) satisfies the specified value.
5) Select page: 6, address: 01, set data: 03, and press the PAUSE button.
6) Select page: 1, and check that the display data (Note1) satisfies the specified value.
7) Select page: F, address: 10, set data: 43, and press the PAUSE button.
8) Select page: 6, address: 01, set data: 69, and press the PAUSE button.
9) Select page: 1, and check that the display data (Note1) satisfies the specified value.
10) Select page: 6, address: 01, set data: 6B, and press the PAUSE button.
11) Select page: 1, and check that the display data (Note1) satisfies the specified value.

Processing after Completing Adjustments:

1) Select page: F, address: 10, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 6, address: 94, and set data: 00.
4) Select page: 6, address: 95, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

4. MR Adjustment

The MR (Magnet resistor) adjustment of the inner focus lens is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Not required
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	50 to 59, 62
Specified Value	The data of page: F, address: 50 is “40” to “C0” The data of page: F, address: 51 is “40” to “C0”

Note: Make the lens horizontal and perform this adjustment.

Switch setting:

POWER .... CAMERA

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: BD, and press the PAUSE button of the adjustment remote commander. (The MR adjustment is performed and the adjustment data is stored in page: F, address: 50 to 59, 62.)
3) Select page: 6, address: 02, and check that the data is “01”.
4) Select page: F, address: 50, and check that the data satisfies the specified value.
5) Select page: F, address: 51, and check that the data satisfies the specified value.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, set data: 00.
3) Turn off the power and turn on again.
4) Perform “Flange Back Adjustment”.

5. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Siemens star chart with ND filter for the minipattern box (Note2)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	13, 4A to 4F, 5A to 62

Note1: Perform this adjustment after performing “HALL Adjustment” and “MR Adjustment”.
Note2: Dark Siemens star chart.

Switch setting:

POWER .... CAMERA
NIGHT SHOT .... OFF

Preparations before adjustments:

The minipattern box is installed as shown in the following figure.
Note: the attachment lenses are not used.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

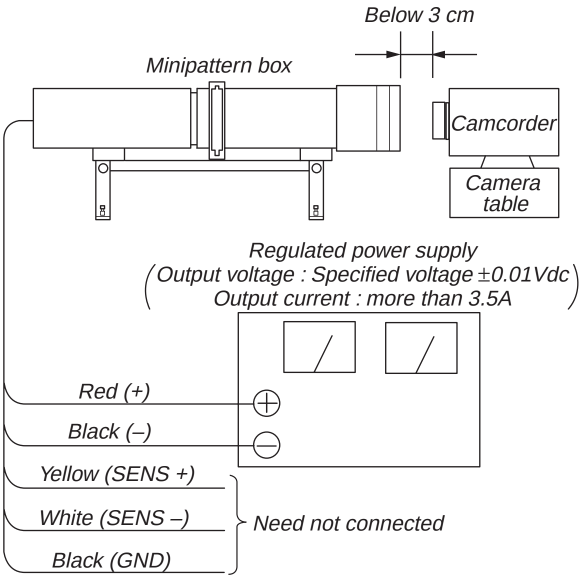


Fig. 5-1-7

Adjusting method:

1) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
2) Make the height of the minipattern box and the camcorder equal.
3) Check that the output voltage of the regulated power supply is the specified voltage.
4) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.
5) Select page: 0, address: 01, and set data: 01.
6) Check that the data of page: F, address: 4A to 4F, 5A to 61 is the initial value (See table below).

Address	Data	Address	Data
4A	79	5B	00
4B	4E	5C	19
4C	33	5D	00
4D	4C	5E	1B
4E	81	5F	00
4F	20	60	00
5A	46	61	00

7) Select page: 6, address: 02, and check that the data is “00”.
8) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
   Note: Don’t touch the zoom lever. If you touch the zoom lever, the zoom center adjustment data will be rewritten in the value which isn’t correct.
9) Select page: 6, address: 01, set data: 27, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 13, 4A to 4F, 5A to 61.)
10) Select page: 6, address: 02, and check that the data is “01”.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Turn off the power and turn on again.
4) Perform “Flange Back Check”.

6. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

6-1. Flange Back Adjustment (1)

Perform this adjustment after performing "HALL Adjustment" and "MR Adjustment".

Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 350 ± 50 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	13, 4A to 4F, 5A to 62

Switch setting:

POWER .... CAMERA
NIGHT SHOT .... OFF

Adjusting method:

1) Check that at both the zoom lens TELE end and WIDE end, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
2) Select page: 0, address: 01, and set data: 01.
3) Check that the data of page: F, address: 4A to 4F, 5A to 61 is the initial value (See table below).

Address	Data	Address	Data
4A	79	5B	00
4B	4E	5C	19
4C	33	5D	00
4D	4C	5E	1B
4E	81	5F	00
4F	20	60	00
5A	46	61	00

4) Select page: 6, address: 02, and check that the data is "00".
5) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
   Note: Don't touch the zoom lever. If you touch the zoom lever, the zoom center adjustment data will be rewritten in the value which isn't correct.
6) Select page: 6, address: 01, set data: 15, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 13, 4A to 4F, 5A to 62.)
7) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Turn off the power and turn on again.
3) Perform "Flange Back Adjustment (2)".

6-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	13, 4A to 4F, 5A to 62

Switch setting:

POWER .... CAMERA
NIGHT SHOT .... OFF

Adjusting method:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 6, address: 02, and check that the data is "00".
4) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
   Note: Don't touch the zoom lever. If you touch the zoom lever, the zoom center adjustment data will be rewritten in the value which isn't correct.
5) Place a ND filter on the lens so that the optimum image is obtain.
6) Select page: 6, address: 01, set data: 29, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 13, 4A to 4F, 5A to 62.)
7) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Turn off the power and turn on again.
4) Perform "Flange Back Check".

7. Flange Back Check

Subject	Siemens star (2.0m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Note: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.
1) Select page: 6, address: 04, and set data: 0F.
2) Page 1 shows the state of the focus.

1 : 00 : XX
Odd: Focused
Even: Unfocused

Checking method:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Shoot the Siemens star with the zoom TELE end.
4) Turn on the auto focus.
5) Check that the lens is focused (Note).
6) Select page: 6, address: 21, and set data: 10.
7) Shoot the Siemens star with the zoom WIDE end.
8) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 04, and set data: 00.

8. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "Color reproduction adjustment frame".

Check on the oscilloscope

1. Horizontal period

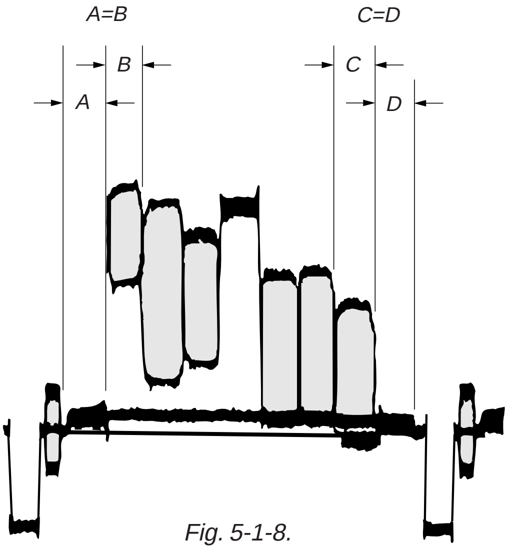


Fig. 5-1-8.

2. Vertical period

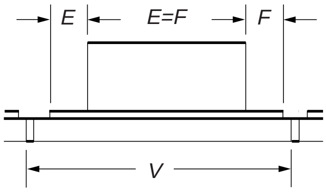


Fig. 5-1-9.

Check on the monitor TV (Underscanned mode)

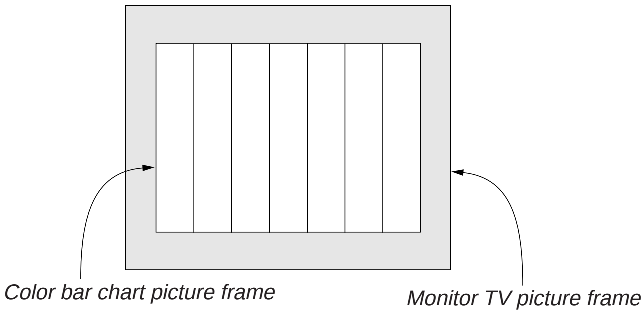


Fig. 5-1-10.

9. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	35, 37, 3C, 3D
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC model: DCR-PC100
PAL model: DCR-PC100E

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Adjusting method:

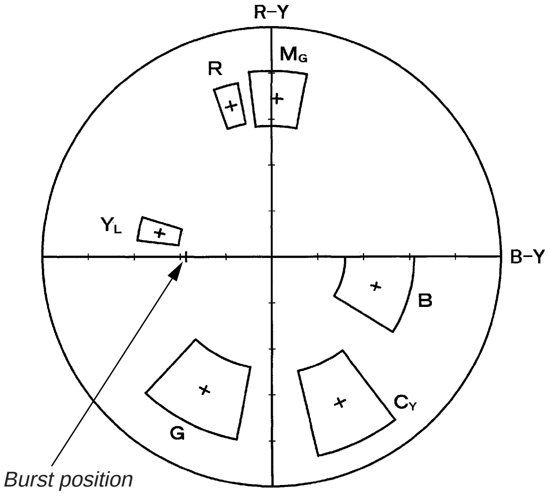
1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 8E, set data: 14, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: C0, set data: 37 (NTSC) or B7 (PAL), and press the PAUSE button.
4) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
5) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
6) Change the data of page: F, address: 35, 37, 3C and 3D, and settle each color luminance point in each color reproduction frame.

   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

Processing after Completing Adjustments:

1) Only for the NTSC model, select page: F, address: 8E, set data: 17, and press the PAUSE button of the adjustment remote commander.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

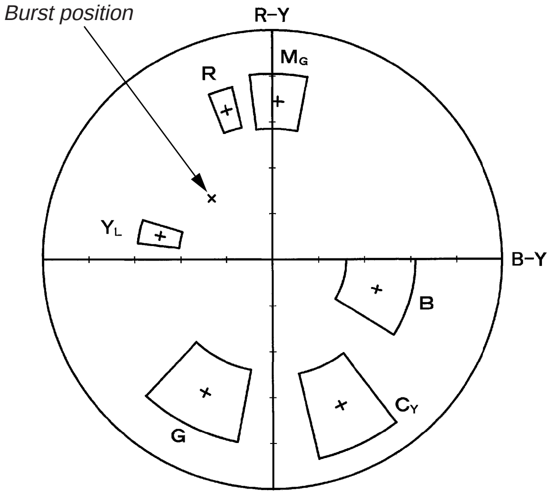


Fig. 5-1-11

10. MAX GAIN Adjustment

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	1D, 8C, 9E, 9F

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) STEADY SHOT (Menu display) .... OFF

Preparation before adjustment

1) Select page: 6, address: 0A, and check the data.
   - If the data is "D0" to "FF".
     Perform "Adjustment method (1)".
   - If the data is "00" to "CF".
     Perform "Adjustment method (2)".

Adjusting method (1):

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to each address.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
1D	80
8C	02
9E	00
9F	00

Adjusting method (2):

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 1D, set data: 78 (NTSC) or 88 (PAL), and press the PAUSE button.
3) Select page: 6, address: 96, and set data: 00 (NTSC) or 40 (PAL).
4) Select page: 6, address: 97, and set data: 23 (NTSC) or 13 (PAL).
5) Select page: 6, address: 01, set data: 6F, and press the PAUSE button of the adjustment remote commander.
   (The MAX GAIN adjustment is performed and the adjustment data is stored in page: F, address: 1D.)
6) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 96, and set data: 00.
3) Select page: 6, address: 97, and set data: 00.
4) Select page: 0, address: 01, and set data: 00.

11. Auto White Balance & LV Standard Data Input

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1E, 1F, 30 to 33
Specified Value	0FF0 to 1010

Note1: This adjustment should be carried out upon completion of "Color Reproduction Adjustment".
Note2: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.
Note3: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 01, set data: 0D, and press the PAUSE button.
   (When the standard data is take in, the data will be automatically input to page: F, address: 1E, 1F, 30 to 33.)
4) Select page: 6, address: 02, and check that the data is "01".

Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 10, set data: 2E, and press the PAUSE button.
3) Select page: 1, and check that the display data (Note3) satisfies the specified value.

Processing after Completing Adjustments:

1) Select page: F, address: 10, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.
4) Perform "Auto White Balance Adjustment".

12. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note2)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	40, 41
Specified Value	R ratio: 2C30 to 2D30 B ratio: 5F20 to 6020

Note1: Perform “Auto White Balance & LV Standard Data Input” before this adjustment.
Note2: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Switch setting:
1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF

Adjusting method:
1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: F, address: 42 to 45, and note down the data of each address.
4) Input the following data to page: F, addresses: 42 to 45.

Address	42	43	44	45
Data	2C	B0	5F	A0

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

5) Select page: 6, address: 01, set data: 83, and press the PAUSE button.
6) Select page: 6, address: 01, set data: 81, and press the PAUSE button.
(The auto white balance adjustment is performed and the adjustment data is stored in page: F, address: 40 and 41.)
7) Select page: 6, address: 02, and check that the data is “01”.
8) Select page: 6, address: 01, set data: 3F, and press the PAUSE button.
9) Select page: 6, address: 04, and set data: 04.
10) Select page: 1, and check that the display data (Note2) satisfies the R ratio specified value.
11) Select page: 6, address: 04, and set data: 05.
12) Select page: 1, and check that the display data (Note2) satisfies the B ratio specified value.
13) Select page: F, address: 42 to 45, and input the data noted down at step 3).
Note: After setting each data, be sure to press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:
1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 04, and set data: 00.
3) Select page: 0, address: 01, and set data: 00.

13. White Balance Check

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-12. A to C

Switch setting:
1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF

Checking method:
1) Check that the lens is not covered with either filter.
2) Select page: 6, address: 01, set data: 0F, and press the PAUSE button of the adjustment remote commander.
3) Check that the center of the white luminance point is within the circle shown Fig. 5-1-12. (A).
4) Select page: 6, address: 01, set data: 23, and press the PAUSE button.
5) Place the C14 filter on the lens.
6) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-12. (B).
7) Remove the C14 filter, and place the ND filter 1.5 (1.0+0.4+0.1) on the lens.
8) Check that the white luminance point stopped moving, and then remove the ND filter 1.5.
9) Check that the center of the white luminance point settles within the circle shown Fig. 5-1-12. (C).

Processing after Completing Adjustments:
1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

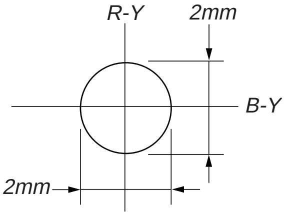


Fig. 5-1-12. (A)

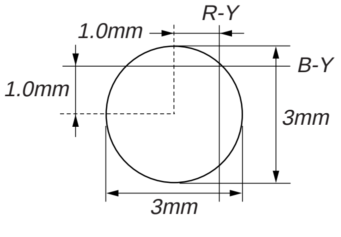


Fig. 5-1-12. (B)

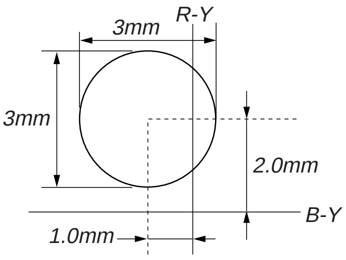


Fig. 5-1-12. (C)

14. Mechanical Shutter Data Input

Adjustment Page	F
Adjustment Address	70 to 84

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: F, addresses: 70 to 84.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
70	45
71	0D
72	E3
73	09
74	88
75	08
76	84
77	07
78	80
79	06
7A	00
7B	46
7C	55
7D	41
7E	AA
7F	48
80	00
81	48
82	00
83	3F
84	1A

3) Select page: 0, address: 01, and set data: 00.

15. Angular Velocity Sensor Sensitivity Adjustment

- This adjustment is performed only when replacing the angular velocity sensor.
  Although this adjustment need not be performed when the circuit is damaged, etc., check the operations.
- Note down the sensitivity displayed on the angular velocity sensor of the repair parts. At this time, note down also to which board it was attached to.
  Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during hand-shake correction operations.

Precautions on the Parts Replacement

There are two types of repair parts.

Type A: ENC03LA
Type B: ENC03LB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method after replacement.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Adjustment Page	F
Adjustment Address	66, 67

Note1: The sensor sensitivity of SE451 and SE450 of the MA-367 board is written only on the repair parts.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the sensor sensitivity written on SE451 (PITCH sensor) of the MA-367 board, and take this as S_{451}.
3) Read the sensor sensitivity written on SE450 (YAW sensor) of the MA-367 board, and take this as S_{450}.
4) Calculate D_{66}' and D_{67}' using the following equation (decimal calculation).
   NTSC model
   $D_{66}' = 48 / S_{451}$
   $D_{67}' = 48 / S_{450}$
   PAL model
   $D_{66}' = 59.4 / S_{451}$
   $D_{67}' = 59.4 / S_{450}$
5) Convert D_{66}' and D_{67}' into hexadecimal digits, to obtain D_{66} and D_{67}. (Round off decimal points)
6) Select page: F, address: 66, set data: D_{66}, and press the PAUSE button of the adjustment remote commander.
7) Select page: F, address: 67, set data: D_{67}, and press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments

1) Select page: 0, address: 01, and set data: 00.
2) Check that the steady shot operations have been performed normally.

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note 1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 2: Set the switches as follows.

LCD screen .... OFF (Closed)
VF BRIGHT (Menu setting) .... Center

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN2903 of the VC-227 board.
Connect the Measuring Instruments via the CPC-8 jig (J-6082-388-A) .
The following table shows the Pin No. and signal name of CN2903.

Pin No.	Signal Name	Pin No.	Signal Name
1	LACN SIG	2	NC
3	NC	4	EVF VG
5	EVF VCO	6	GND
7	PD VG	8	PD VCO
9	H START	10	XHD/PSIG
11	PANEL COM	12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

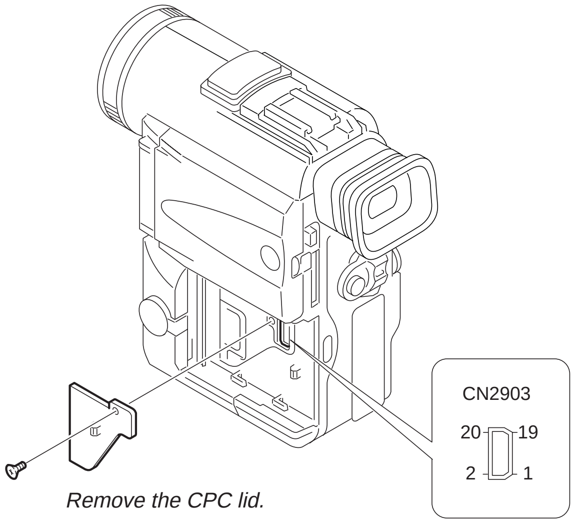


Fig. 5-1-13

1. VCO Adjustment (VF-138 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑤ of CN2903 (EVF VCO) of VC-227 board
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	75
Specified Value	A = 1.75 ± 0.2V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Check the GND level of the oscilloscope.
5) Select page: D, address: 75, change the data and set the VCO output voltage (A) to the specified value.
6) Press the PAUSE button.
7) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
8) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
9) Select page: 0, address: 01, and set data: 00.

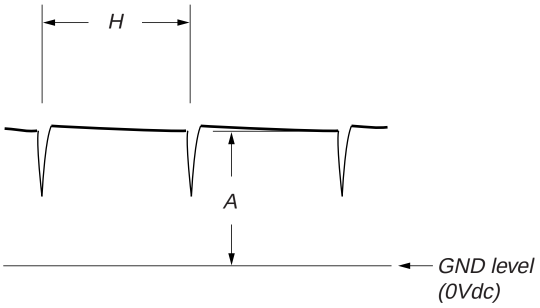


Fig. 5-1-14

2. Bright Adjustment (VF-138 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN2903 (EVF VG) of VC-227 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	7A
Specified Value	A = 7.34 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 7A, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

3. Contrast Adjustment (VF-138 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN2903 (EVF VG) of VC-227 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	7B
Specified Value	A = 1.95 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 7B, change the data and set the voltage (A) between the 3-step peak and pedestal to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

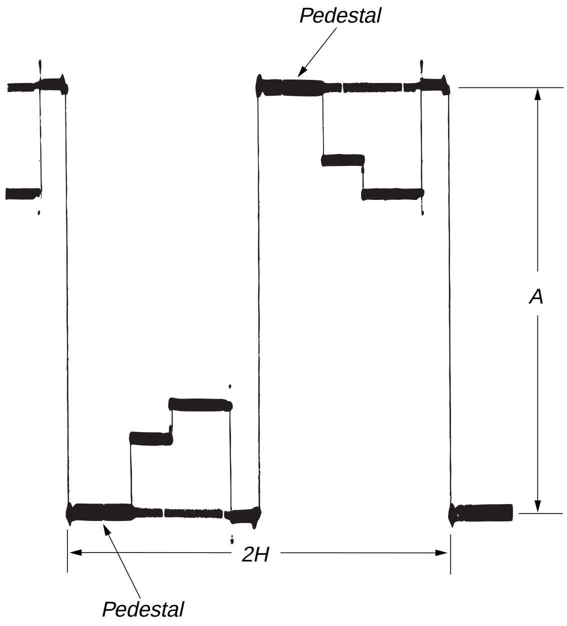


Fig. 5-1-15

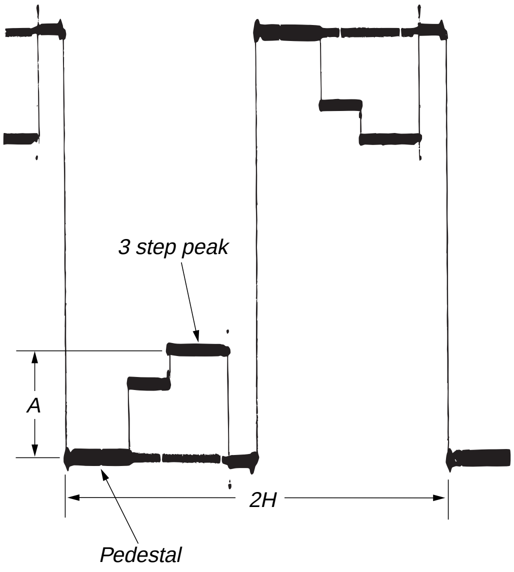


Fig. 5-1-16

4. White Balance Adjustment (VF-138 board)

Correct the white balance.
If deviated, the reproduction of the EVF screen may degenerate.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	71, 72
Specified Value	The EVF screen should not be colored.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0B, and press the PAUSE button.
4) Select page: D, address: 71 and 72, set the data to the initial value.

   Note: Press the PAUSE button each time to set the data.

Address	Data
71	A6
72	A2

5) Check that the EVF screen is not colored. If colored, change the data of page: D, address: 71 and 72 so that the EVF screen is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.

6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

1-5. LCD SYSTEM ADJUSTMENT

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the function settings of the touch panel as follow.
PANEL BRIGHT (Menu setting) .... Center
PANEL COLOR (Menu setting) .... Center

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN8201 of the PD-125 board.
The following table shows the Pin No. and signal name of CN8201.

Pin No.	Signal Name
1	VG
2	COM
3	GND
4	PSIG
5	VCO CENT

Table 5-1-8

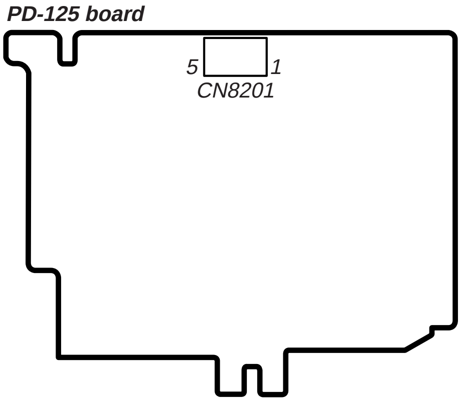


Fig. 5-1-17

1. VCO Adjustment (PD-125 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑤ of CN8201 (VCO CENT)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	84
Specified Value	A = 1.8 ± 0.1V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check the GND level of the oscilloscope.
3) Select page: D, address: 84, change the data and set the PCO output voltage (A) to the specified value.
4) Press the PAUSE button.
5) Select page: 0, address: 01, and set data: 00.

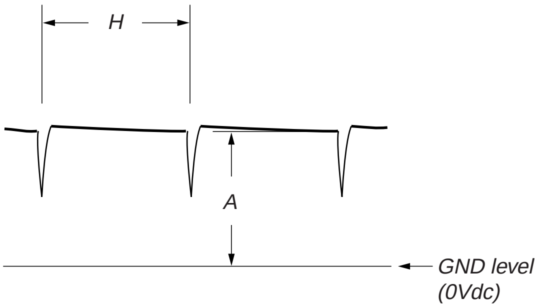


Fig. 5-1-18

2. Black Limit Adjustment (PD-125 board)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN8201 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82
Specified Value	A = 8.00 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 0F, and set data: 01.
3) Select page: D, address: 82, change the data and set the PSIG signal amplitude (A) to the specified value.
4) Press the PAUSE button.
5) Select page: 2, address: 0F, and set data: 00.
6) Select page: 0, address: 01, and set data: 00.

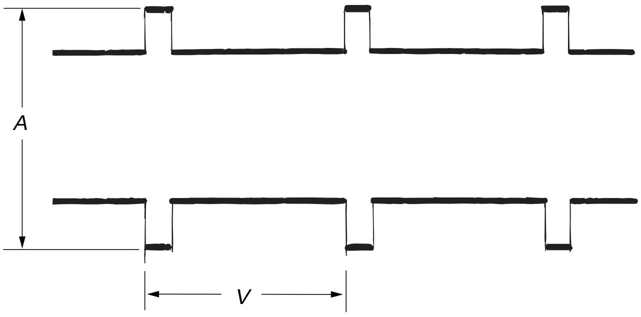


Fig. 5-1-19

3. Bright Adjustment (PD-125 board)

Set the level of the VIDEO signal for driving the LCD to an appropriate level. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ① of CN8201 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8A
Specified Value	A = 7.20 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 08, and press the PAUSE button.
4) Select page: D, address: 8A, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

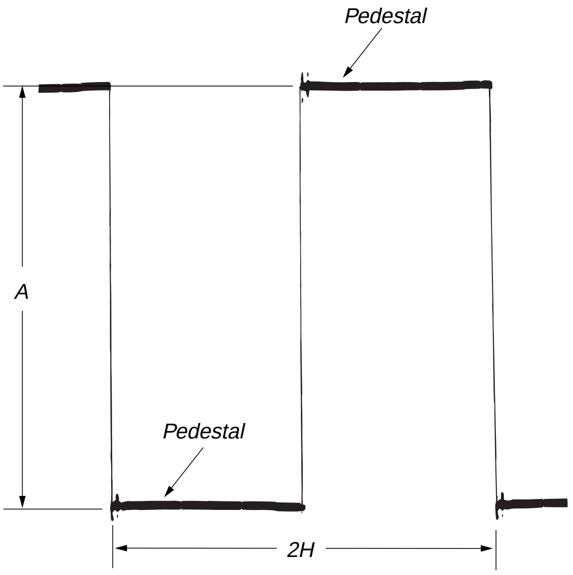


Fig. 5-1-20

4. Gamma-1 Adjustment (PD-125 board)

Set the level of the VIDEO signal for driving the LCD to an appropriate level. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ① of CN8201 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83
Specified Value	A = 1.65 ± 0.05V

Note: This adjustment and “Contrast Adjustment” must be repeated alternately until both specifications are satisfied simultaneously (called tracking adjustment).

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: 2, address: 0E, and set data: 40.
5) Select page: D, address: 83, change the data and set the voltage (A) between the pedestal and Gamma-1 limiter level to the specified value.
6) Press the PAUSE button.
7) Select page: 2, address: 0E, and set data: 00.
8) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.
11) Perform “5, Contrast Adjustment”.

5. Contrast Adjustment (PD-125 board)

Set the level of the VIDEO signal for driving the LCD to an appropriate level. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ① of CN8201 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8C
Specified Value	A = 2.42 ± 0.05V

Note: This adjustment and “Gamma-1 Adjustment” must be repeated alternately until both specifications are satisfied simultaneously (called tracking adjustment).

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 01, and press the PAUSE button.
4) Select page: D, address: 8C, change the data and set the voltage (A) between the 0 IRE (pedestal) and 90 IRE to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.
9) Check that the specified value of the “Gamma-1 Adjustment” is satisfied at this time. If it is found that the specified value is not satisfied, perform “Gamma-1 Adjustment” again, then perform “Contrast Adjustment” once again.

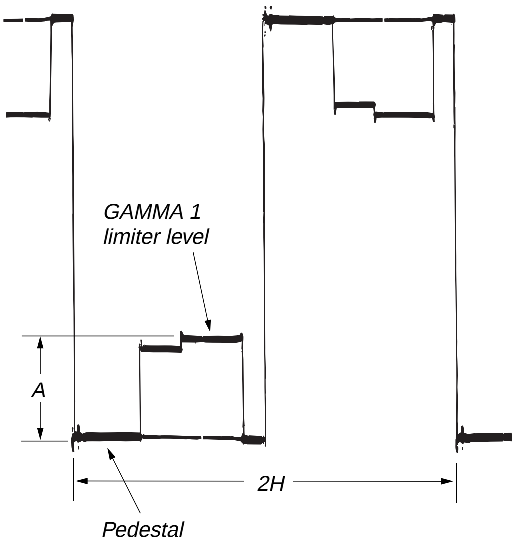


Fig. 5-1-21

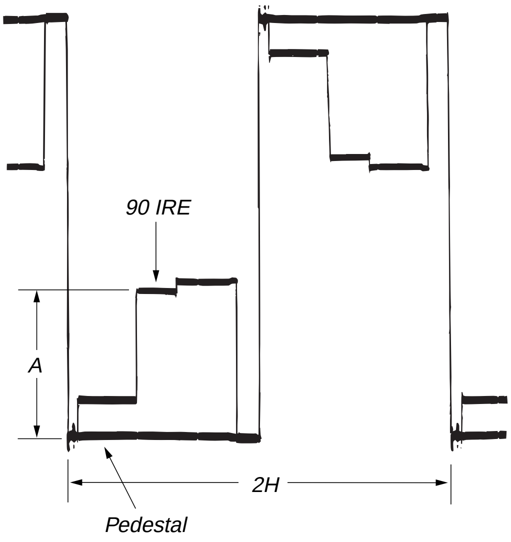


Fig. 5-1-22

6. Center Level Adjustment (PD-125 board)

Set the video signal center level of LCD panel to an appropriate level.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ① of CN8201 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	85
Specified Value	A = 5.5 ± 0.1Vdc

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 08, and press the PAUSE button.
4) Select page: D, address: 85, change the data and set the DC voltage (A) of VG signal to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

7. White Balance Adjustment (PD-125 board)

Correct the white balance.

If deviated, the LCD screen color cannot be reproduced.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	80, 81
Specified Value	The LCD screen should not be colored.

Note 1: Check the white balance only when replacing the following parts. If necessary, adjust them.

1. LCD panel
2. Light induction plate
3. IC8001

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0B, and press the PAUSE button.
4) Select page: D, address: 80 and 81, set the data to the initial value.

   Note: Press the PAUSE button each time to set the data.

Address	Data
80	9E
81	80

5) Check that the LCD screen is not colored. If colored, change the data of page: D, address: 80 and 81 so that the LCD screen is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

5-2. MECHANISM SECTION ADJUSTMENT

On the mechanism section adjustment
For detail of mechanism section adjustments, checks, and replacement of mechanism parts, refer to the separate volume “DV MECHANICAL ADJUSTMENT MANUAL Ⅰ D Mechanism ” and “DV MECHANICAL ADJUSTMENT MANUAL Ⅲ D200 Mechanism ”.

2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0B, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-3. TAPE PATH ADJUSTMENT

Note: The lens block (CD-234 board) must be connected when performing the adjustments.

1. Preparation for Adjustment

1) Clean the tape running side (tape guide, drum, capstan shaft, pinch roller, etc.).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-227 board CN2903 via the CPC-8 jig (J-6082-388-A).
   Channel 1: VC-227 board, CN2903 Pin ⑳ (Note)
   External trigger: VC-227 board, CN2903 Pin ⑰
   Note: Connect a 75Ω resistor between Pins ⑳ of CN2903 and ⑲ (GND).
5) Playback the alignment tape for tracking. (XH2-1)
6) Select page: 3, address: 33, and set data: 08.
7) Select page: 3, address: 26, and set data: 31.
8) Check that the oscilloscope RF waveform is flat at the entrance and exit.
   If not flat, adjust according to the separate volume “DV MECHANICAL ADJUSTMENT MANUAL Ⅰ D Mechanism” and “DV MECHANICAL ADJUSTMENT MANUAL Ⅲ D200 Mechanism ”.

CN2903 of VC-227 board

Pin No.	Signal Name	Pin No.	Signal Name
1	LACN SIG	2	NC
3	NC	4	EVF VG
5	EVF VCO	6	GND
7	PD VG	8	PD VCO
9	H START	10	XHD/PSIG
11	PANEL COM	12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

2. Processing after Completing Operations:

1) Connect the adjustment remote commander to the LANC jack and set the HOLD switch to the ON position.
2) Select page: 3, address: 26, and set data: 00.
3) Select page: 3, address: 33, and set data: 00.

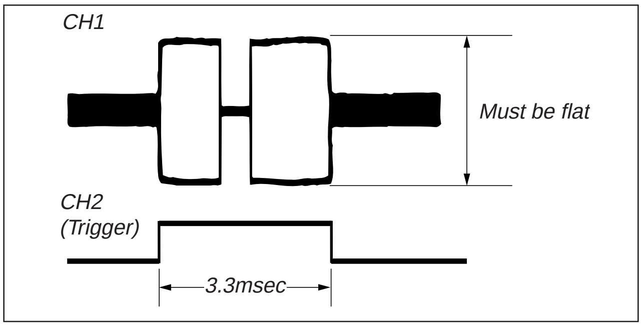


Fig. 5-2-1.

5-3. VIDEO SECTION ADJUSTMENT

NTSC model : DCR-PC100
PAL model : DCR-PC100E

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tapes
    - Tracking standard (XH2-1)
      Parts code: 8-967-997-01
    - SW/OL standard (XH2-3)
      Parts code: 8-967-997-11
    - Audio operation check for NTSC (XH5-3)
      Parts code: 8-967-997-51
    - System operation check for NTSC (XH5-5)
      Parts code: 8-967-997-61
    - BIST check for NTSC (XH5-6)
      Parts code: 8-967-997-71
    - Audio operation check for PAL (XH5-3P)
      Parts code: 8-967-997-55
    - System operation check for PAL (XH5-5P)
      Parts code: 8-967-997-66
    - BIST check for PAL (XH5-6P)
      Parts code: 8-967-997-76
12) Adjustment remote commander (J-6082-053-B)
13) CPC-8 jig (J-6082-388-A)
14) IR receiver jig (J-6082-383-A)

3-1-2. Precautions on Adjusting

1) The adjustments of this unit are performed in the VTR mode or camera mode.
   To set to the VTR mode, set the power switch to "VTR" or set the "Forced VTR Power ON" mode using the adjustment remote commander (Note 1).
   To set to the Camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON" mode using the adjustment remote commander (Note 2).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note 3)
2) As removing the cabinet (L) (removing CN1051 of the control switch block (FK-4950)) means removing the lithium 3V power supply (BT1050), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (L) has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data and the data on history use (data of page: 2, address: A2 to AA). (Refer to "SELF-DIAGNOSIS FUNCTION" for the self-diagnosis data, and to "5-4.Service Mode" for the data on the history use.)
3) The cabinet (L) (Control switch block (FK-4950)) need not be connected during adjustment if the "Forced VTR power ON" mode is set. To remove the cabinet (L), disconnect the following connectors.
   FK-4950 block CN1051 (30P, 0.5mm)
4) As the timing generator (IC102) is provided on the CD-234 board, the CN101 of CD-234 board and CN201 of VC-227 board must be connected when performing adjustments.
5) The viewfinder (VF-138 board) need not be connected. To remove it, disconnect the following connector.
   VC-227 board CN2923 (20P, 0.5mm)
6) The MA-367 board need not be connected. To remove it, disconnect the following connector.
   VC-227 board CN2924 (20P, 0.5mm)
7) The LCD block need not be connected. To remove it, disconnect the following connectors.
   1. VC-227 board CN2911 (13P, 1.0mm)
   2. VC-227 board CN2915 (4P, 1.0mm)
   3. VC-227 board CN2916 (5P, 0.5mm)
8) The control switch block ME-4950 need not be connected. To remove it, disconnect the following connector.
   VC-227 board CN2917 (5P, 0.5mm)
9) The FP-128 flexible (Memory stick slot and control switch block (FK-4950)) need not be connected during adjustment if the "Forced VTR power ON" mode is set. To remove it, disconnect the following connectors.
   VC-227 board CN2918 (33P, 0.3mm)

Note 1: Setting the "Forced VTR Power ON" mode (VTR mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the VTR power to be turned on with the cabinet (L) (Control switch block: FK-4950) removed. After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 2: Setting the "Forced Camera Power ON" mode (Camera mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the camera power to be turned on with the cabinet (L) (Control switch block: FK-4950) removed. After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 3: Setting the "Forced Memory Power ON" mode (Memory mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 05, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the memory power to be turned on with the cabinet (L) (Control switch block: FK-4950) removed. After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 4: Exiting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-227 board CN2903. Connect the measuring instruments via the CPC-8 jig (J-6082-388-A). The following table lists the pin numbers and signal names of CN2903

Pin No.	Signal Name	Pin No.	Signal Name
1	LACN SIG	2	NC
3	NC	4	EVF VG
5	EVF VCO	6	GND
7	PD VG	8	PD VCO
9	H START	10	XHD/PSIG
11	PANEL COM	12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

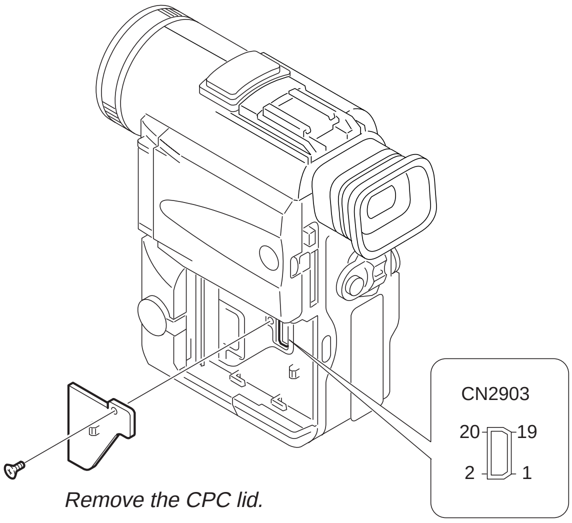

CN2903
20
19
2
1
Remove the CPC lid.

Fig. 5-3-1.

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-2, and perform the adjustments.

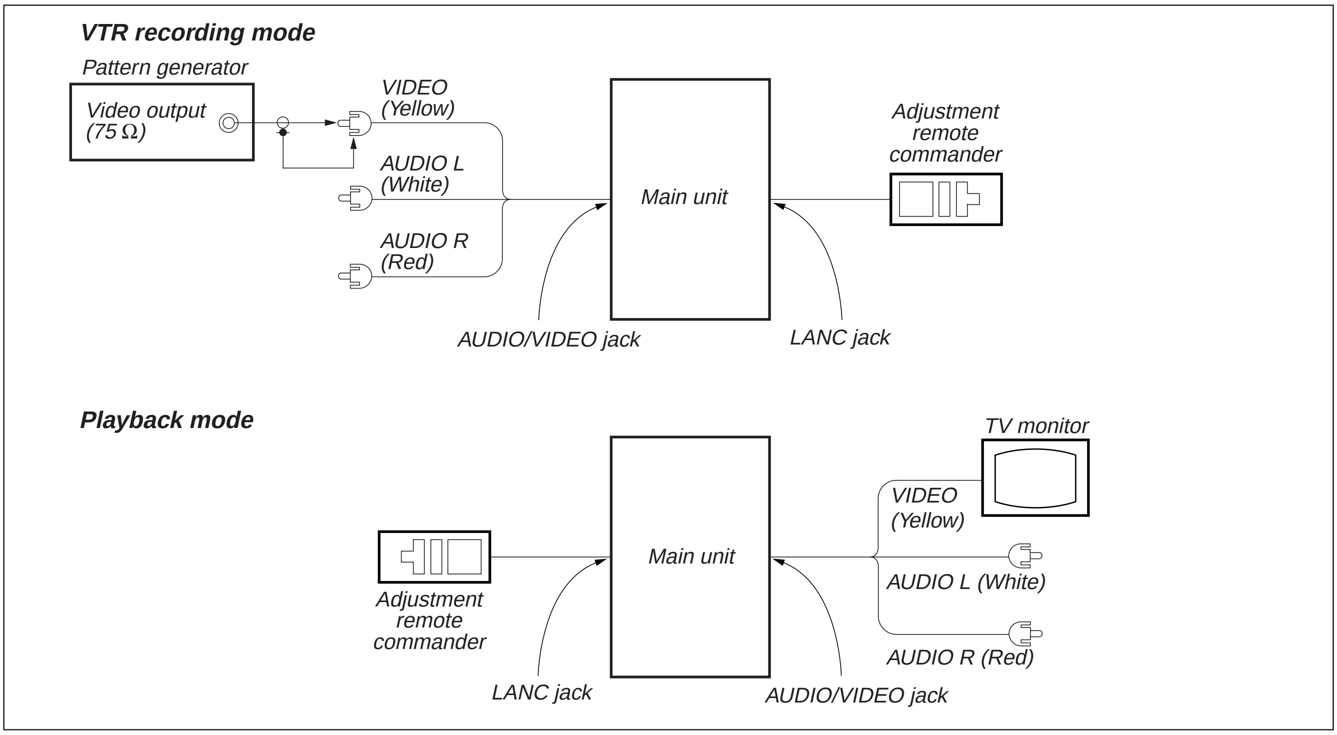

VTR recording mode
Pattern generator
Video output
(75 Ω)
VIDEO
(Yellow)
AUDIO L
(White)
AUDIO R
(Red)
Main unit
Adjustment
remote
commander
AUDIO/VIDEO jack
LANC jack
Playback mode
TV monitor
VIDEO
(Yellow)
AUDIO L (White)
AUDIO R (Red)
Main unit
Adjustment
remote
commander
LANC jack
AUDIO/VIDEO jack

Fig. 5-3-2.

3-1-5. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjusting the VTR section, the video output signal must satisfy the given specifications.

Connect the oscilloscope to the video terminal of the AUDIO/VIDEO jack, and check that the sync signal amplitude of the video signal is approximately <0.286V> [0.30V], the amplitude of the video section is approximately <0.714> [0.70V], the amplitude of the burst signal is approximately <0.286> [0.30V] and flat, and that the level ratio of the burst signal to the “red” signal is 0.30 : 0.60.

The video signal used for adjusting the video section is shown in Fig. 5-3-3.

< > : NTSC model
[ ] : PAL model

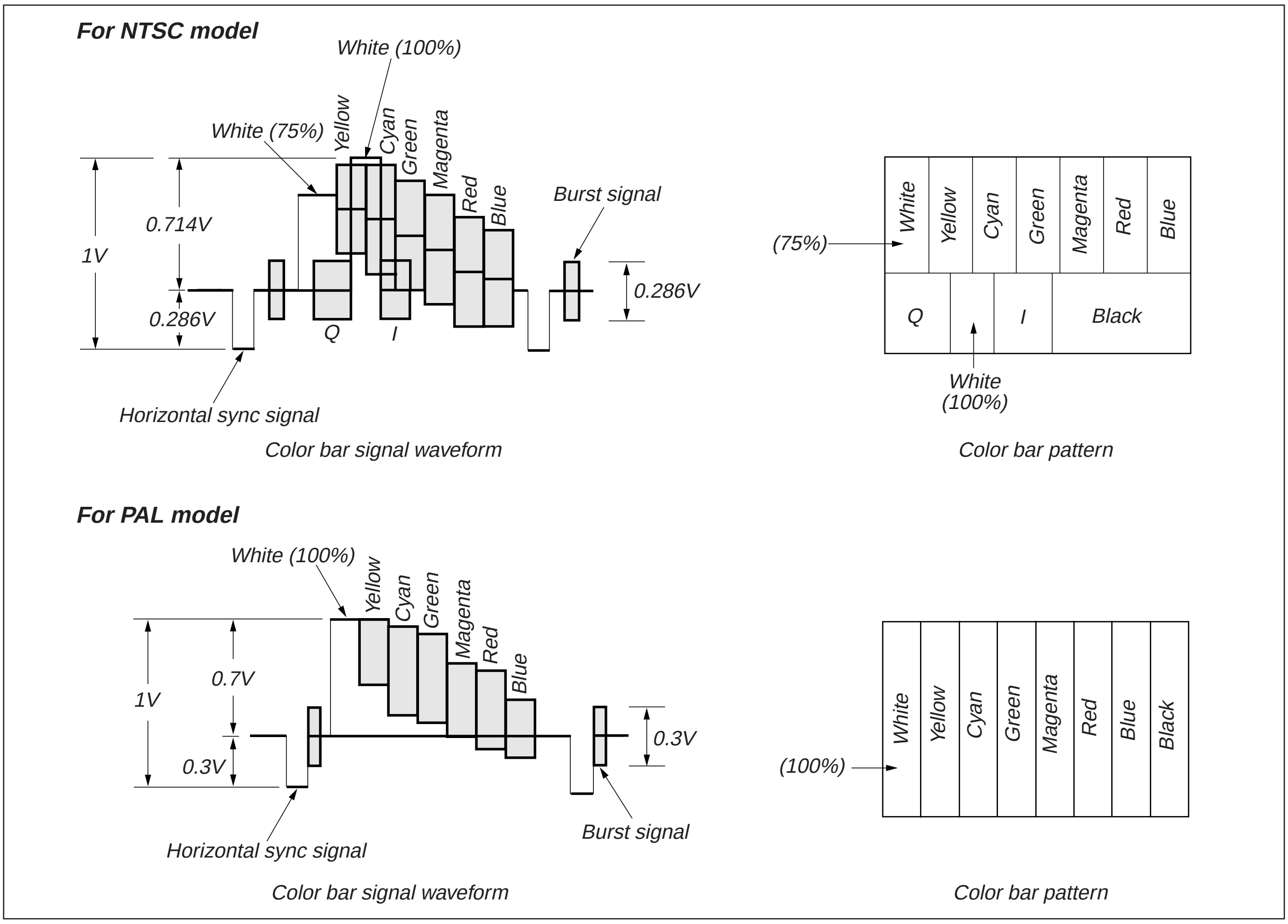
3-1-6. Alignment Tapes

Use the alignment tapes shown in the following table.
Use tapes specified in the signal column of each adjustment.

Name	Use
Tracking standard (XH2-1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH5-5P (PAL))	Operation check
BIST check (XH5-6 (NTSC), XH5-6P (PAL))	BIST check

Fig. 5-3-3 shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video terminal (Terminated at 75 Ω)


For NTSC model

Color bar signal waveform

Color bar pattern

For PAL model

Color bar signal waveform

Color bar pattern

White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst signal
0.714V
1V
0.286V
Q
I
0.286V
Horizontal sync signal
White
Yellow
Cyan
Green
Magenta
Red
Blue
(75%)
Q
I
Black
White
(100%)
White (100%)
Yellow
Cyan
Green
Magenta
Red
Blue
0.7V
1V
0.3V
0.3V
Horizontal sync signal
Burst signal
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black
(100%)

Fig. 5-3-3. Color bar signal of alignment tapes

3-1-7. Input/Output Level and Impedance

Video input/output
- Special stereo mini jack
- Video signal: 1 Vp-p, 75 Ω unbalanced, sync negative

S video input/output
- 4-pin mini DIN
- Luminance signal: 1 Vp-p, 75 Ω unbalanced, sync negative
- Chrominance signal: 0.286 Vp-p, 75 Ω unbalanced (NTSC)
  : 0.300 Vp-p, 75 Ω unbalanced (PAL)

Audio input/output
- Special stereo mini jack
- Input level: 327mV
- Input impedance: More than 47kΩ
- Output level: 327 mV (at load impedance 47 kΩ)
- Output impedance: Below 2.2 kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of B, C, D, E, F, 7 Page Data

If the B, C, D, E, F, 7 page data is erased due to some reason, perform “1-2. INITIALIZATION OF B, C, D, E, F, 7 PAGE DATA”, of “5-1. CAMERA SECTION ADJUSTMENT”

2. Serial No. Input

2-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	C
Address	2C, 2D, 2E, 2F, 30

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: C, addresses: 2C to 30.

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
2C	08
2D	00
2E	46
2F	01
30	01

3) Select page: 0, address: 01, and set data: 00.

2-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	C
Address	31, 32, 33

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. on the name plate, and take it as D_1.
   Example: If the serial No. is 77881.
   D_1=77881
3) Obtain D_2 and H_1 corresponding to D_1 from Table 5-3-1.
   Example: If D_1 is “77881”.
   $D_2=D_1-65536=12345$
   H_1=FE

D_1 (Decimal)	D_2 (Decimal)	H_1 (Hexadecimal) (Service model code)
000001 to 065535	D_1	FE
065536 to 131071	D_1–65536	FE
131072 to 196607	D_1–131072	FE

Table 5-3-1.

4) Input H_1 to page: C, address: 31. (Model code input)
   Example: If H_1 is “FE”.
   Select page: C, address: 31, set data: FE, and press the PAUSE button.
5) Obtain the maximum decimal not exceeding D_2 from Table 5-3-2, and take this as D_3.
   Example: If D_2 is “12345”.
   D_3=12288
6) Obtain the hexadecimal corresponding to D_3 from Table 5-3-2, and take this as H_3.
   Example: If D_3 is “12288”.
   H_3=3000
7) Obtain the difference D_4 between D_2 and D_3. (Decimal calculation, $0 \leqq D_4 \leqq 255$)
   $D_4= D_2-D_3$
   Example: If D_2 is “12345” and D_3 is “12288”.
   D_4=12345–12288=57
8) Convert D_4 to hexadecimal, and take this as H_4.
   (Refer to “Hexadecimal-decimal conversion table” in “5-4. Service Mode”.)
   Example: If D_4 is “57”.
   H_4=39
9) Input the upper 2 digits of H_3 to page: C, address: 32.
   Example: If H_3 is “3000”.
   Select page: C, address: 32, set data: 30, and press the PAUSE button.
10) Input H_4 to page: C, address: 33.
   Example: If H_4 is “39”.
   Select page: C, address: 33, set data: 39, and press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 5-3-2.

3. Battery End Check (VC-227 board)

Check the battery end voltage.

Mode	Camera recording
Subject	Arbitrary

Switch setting

1) AUTO FOCUS .... OFF
2) LCD screen .... OFF (Closed)
3) REC LAMP (Menu display) .... ON

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-3-4.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.0 ± 0.1Vdc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.
5) Load a cassette, and set to the camera recording mode.
6) Check that the REC LAMP is lit continuously.
7) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.50 ± 0.01Vdc.
8) Check that the REC LAMP blinks at 0.8 Hz.

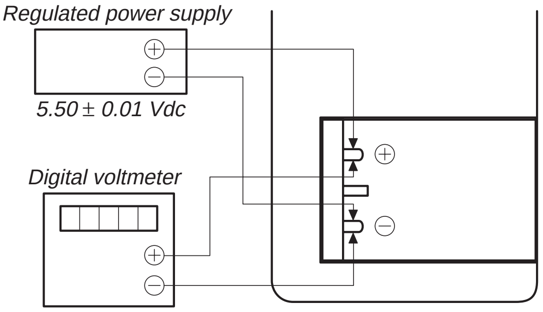


Fig. 5-3-4.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of “54MHz/66MHz Origin Oscillation Adjustment” of “CAMERA SYSTEM ADJUSTMENT” is satisfied.

Adjusting Procedure:

1. Cap FG duty adjustment
2. T-reel FG duty adjustment
3. PLL f_0 & LPF f_0 adjustment
4. Switching position adjustment
5. AGC center level and APC & AEQ adjustment
6. PLL f_0 & LPF f_0 final adjustment

1. Cap FG Duty Adjustment (VC-227 board)

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	16
Specified Value	00

Adjusting method:

1) Close the cassette compartment without inserting a cassette.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 01, set data: 1B, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 02, and check that the data changes starting from “1B” to “2B” to “00” in this order.
5) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is “01”, adjustment has errors or the mechanism deck is defective.
6) Select page: 0, address: 01, and set data: 00.

2. T reel FG Duty Adjustment (VC-227 board)

Adjust the take-up reel FG signal duty cycle to an appropriate value so that the correct T-reel FG signal is obtained.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	17
Specified Value	00

Adjusting method:

1) Close the cassette compartment without inserting a cassette.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 01, set data: 1C, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 02, and check that the data changes starting from “1C” to “2C” to “00” in this order.
5) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is “02”, adjustment has errors or the mechanism deck is defective.
6) Select page: 0, address: 01, and set data: 00.

3. PLL f_0 & LPF f_0 Adjustment (VC-227 board)

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	Bit2, bit3 and bit6 are “0”

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 02, and check that the data changes to “00”.
4) Select page: 3, address: 03, and check that bit2, bit3 and bit 6 of the data are “0”.
   Note: If bit2, bit3 or bit 6 of the data is “1”, there are errors. (For the error contents, see the following table. For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)
5) Select page: 0, address: 01, and set data: 00.

Bit value of page: 3, address: 03 data	Error contents
bit 4 = 1	PLL f_0, even channel is defective
bit 5 = 1	PLL f_0, odd channel is defective
bit 6 = 1	LPF f_0 is defective
bit 3 = 1	PLL f_0, final adjustment is defective
bit 2 = 1	PLL f_0, final adjustment time-out

4. Switching Position Adjustment (VC-227 board)

Mode	VTR playback
Signal	SW/OL reference tape (XH2-3)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Adjusting method:

1) Insert the SW/OL reference tape and enter the VTR STOP mode.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 21, and check that the data is “02”.
   Note: If the data of page: 3, address: 21 is “72”, the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 4 and higher.
4) Select page: 3, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 02, and check that the data changes to “00”.
6) Select page: 3, address: 03, and check that the data is “00”.
   Note: If bit 0 of page: 3, address: 03 data is “1”, the even channel is defective. If bit 1 is “1”, the odd channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)
7) Select page: 0, address: 01, and set data: 00.

When the even channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC2404) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC1900 (TRX)

When the odd channel is defective

Data of page: C, address: 12	Contents of defect
EE	Writing into EEPROM (IC2404) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC1900 (TRX)

5. AGC Center Level and APC & AEQ Adjustment

5-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

Adjusting method:

1) Select page: 2, address: 30, and set data: 40.
2) Record the camera signal for three minutes.

5-2. AGC Center Level Adjustment (VC-227 board)

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑳ of CN2903 (RF MON) (Note 1) Ext. trigger : Pin ⑰ of CN2903 (SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The display data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN2903.
75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Playback the recorded signal at “Preparations before adjustments”
3) Select page: 3, address: 33, and set data: 08.
4) Confirm that the playback RF signal is stable.
5) Select page: 3, address: 01, set data: 23, and press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 02, and check that the data is “00”.
7) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is other than “00”, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)
8) Perform “APC & AEQ Adjustment”.

Data of page: 3, address: 03	Contents of defect
20	Perform re-adjustment. (Note 2)
30	The machine is defective
40	Perform re-adjustment (Note 2)
50	The machine is defective

Note 2: If this data is displayed twice successively, the machine is defective.

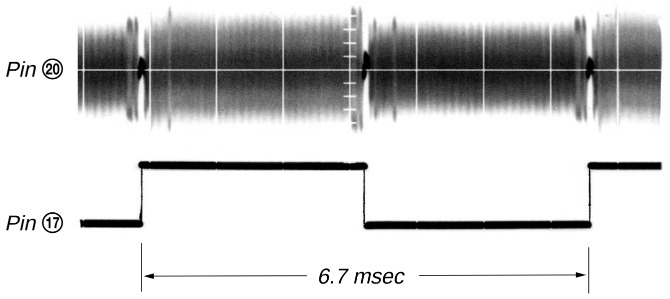


Fig. 5-3-5.

5-3. APC & AEQ Adjustment (VC-227 board)

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑳ of CN2903 (RF MON) (Note 1) Ext. trigger : Pin ⑰ of CN2903 (SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 73
Specified Value	The display data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN2903.
75Ω resistor (Parts code: 1-247-804-11)

Note 2: The “AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Playback the recorded signal at “Preparations before adjustments”
3) Select page: 3, address: 33, and set data: 08.
4) Check that the playback RF signal is stable.
5) Select page: 3, address: 01, set data: 07, and press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 02, and check that the data changes from “07” to “00” in about 15 seconds after pressing the PAUSE button.
7) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is other than “00”, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)
8) Perform “Processing after Completing Adjustments”.

Data of page: 3, address: 03	Contents of defect
20	Perform re-adjustment. (Note 3)
30	The machine is defective
50	Perform re-adjustment (Note 3)
60	The machine is defective
80	The machine is defective

Note 3: If this data is displayed twice successively, the machine is defective.

5-4. Processing after Completing Adjustments

1) Select page: 2, address: 30, and set data: 00.
2) Select page: 3, address: 33, and set data: 00.
3) Select page: 0, address: 01, and set data: 00.

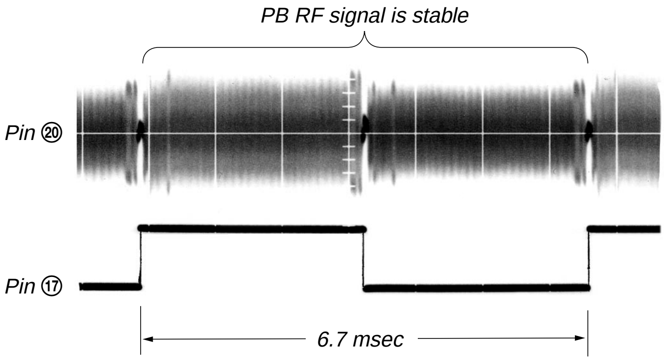


Fig. 5-3-6.

6. PLL f_0 & LPF f_0 Final Adjustment (VC-227 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	Bit2, bit3 and bit6 are “0”

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 02, and check that the data changes to “00”.
4) Select page: 3, address: 03, and check that bit2, bit3 and bit 6 of the data are “0”.
   Note: If bit2, bit3 or bit 6 of the data is “1”, there are errors. (For the error contents, see the following table. For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)
5) Select page: 0, address: 01, and set data: 00.

Bit value of page: 3, address: 03	Error contents
bit 4 = 1	PLL f_0, even channel is defective
bit 5 = 1	PLL f_0, odd channel is defective
bit 6 = 1	LPF f_0 is defective
bit 3 = 1	PLL f_0 final adjustment is defective
bit 2 = 1	PLL f_0 final adjustment time-out

3-4. VIDEO SYSTEM ADJUSTMENTS

Before perform the video system adjustments, check that the specified value of “54MHz/66MHz Origin Oscillation Adjustment” of “CAMERA SYSTEM ADJUSTMENT” is satisfied.

Note: The lens block (CD-234 board) must be connected when performing the adjustments.

3-4-1. Base Band Block Adjustments

1. Chroma BPF f_0 Adjustment (VC-227 Board)

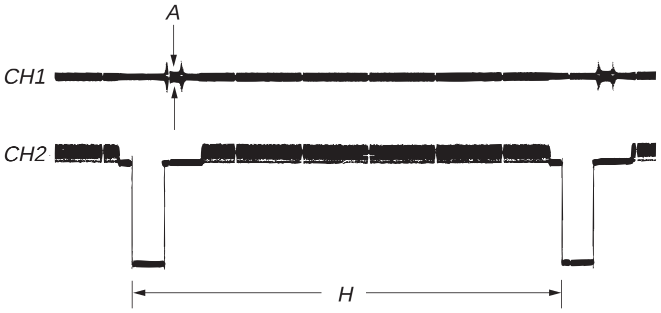
Set the center frequency of IC1402 chroma band-pass filter.

Mode	Camera
Subject	All black (Cover the lens with the lens cap)
Measurement Point	CH1: Chroma signal terminal of S VIDEO jack (75Ω terminated) CH2: Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	2B
Specified Value	A = 100mVp-p or less B = 200mVp-p or more

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 51, set data: 73, and press the PAUSE button of the adjustment remote commander.
3) Check that the burst signal (B) is output to the chroma signal terminal of S VIDEO jack.
4) Select page: 3, address: 0C, set data: 04, and press the PAUSE button.
5) Select page: C, address: 2B, and change the data for minimum amplitude of the burst signal level (A).
(The data of address: 2B should be “00” to “07”.)
6) Press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Check that the burst signal level (B) satisfies the specified value.
9) Select page: C, address: 51, set data: 03, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

When the data of page: 3, address: 0C, is 04:



When the data of page: 3, address: 0C, is 00:

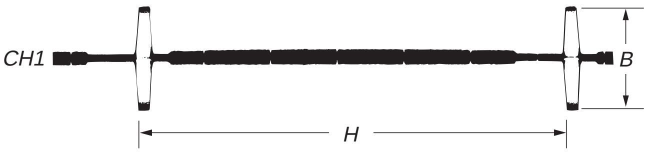


Fig. 5-3-7.

2. S VIDEO OUT Y Level Adjustment (VC-227 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 14mV

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 35. After noting down the data of this address, set data: 01 to the address.
3) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: C, address: 25, change the data and set the Y signal level (A) to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
7) Select page: 2, address: 35, and set the data that is noted down at step 2).
8) Select page: 0, address: 01, and set data: 00.

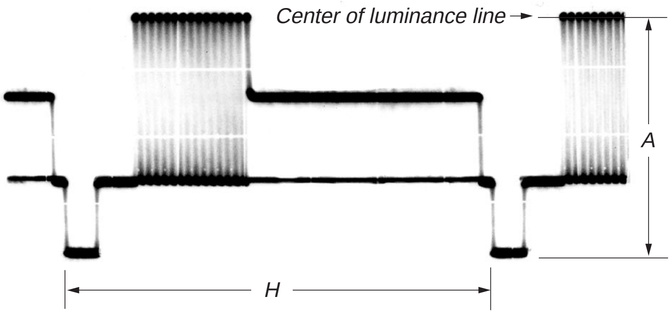


Fig. 5-3-8.

3. S VIDEO OUT Chroma Level Adjustment (VC-227 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV(NTSC) A = 700 ± 14mV(PAL) Cb level: B = 714 ± 14mV(NTSC) B = 700 ± 14mV(PAL) Burst level: C = 286 ± 6mV(NTSC) C = 300 ± 6mV(PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 35. After noting down the data of this address, set data: 01 to the address.
3) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: C, address: 26, change the data and set the Cr signal level (A) to the specified value.
5) Press the PAUSE button.
6) Select page: C, address: 27, change the data and set the Cb signal level (B) to the specified value.
7) Press the PAUSE button.
8) Check that the burst signal level (C) is satisfied the specified value.
9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
10) Select page: 2, address: 35, and set the data that is noted down at step 2).
11) Select page: 0, address: 01, and set data: 00.

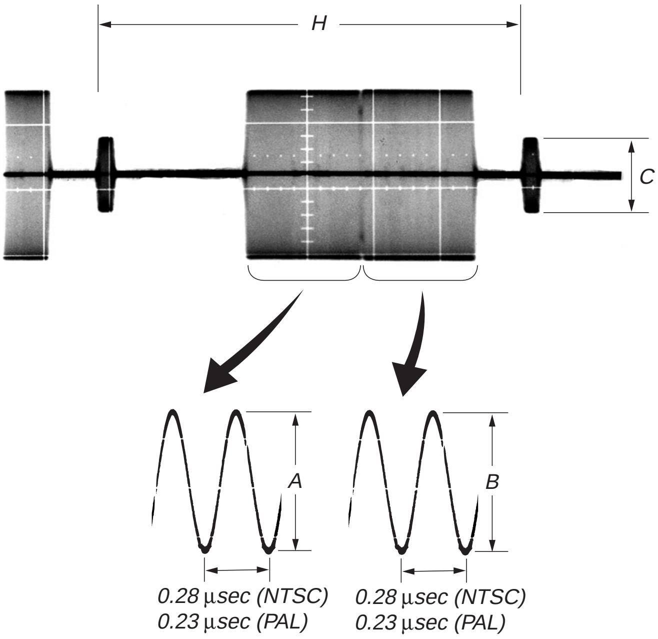


Fig. 5-3-9.

4. AV OUT Y, Chroma Level Check (VC-227 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Video terminal of AUDIO/VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 286 ± 18mV(NTSC) A = 300 ± 18mV(PAL) Burst level: B = 286 ± 18(mV(NTSC) B = 300 ± 18mV(PAL)

Adjusting method:

1) Select page: 2, address: 35. After noting down the data of this address, set data: 01 to the address.
2) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Check that the sync signal level (A) satisfies the specified value.
4) Check that the burst signal level (B) satisfies the specified value.
5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
6) Select page: 2, address: 35, and set the data that is noted down at step 1).

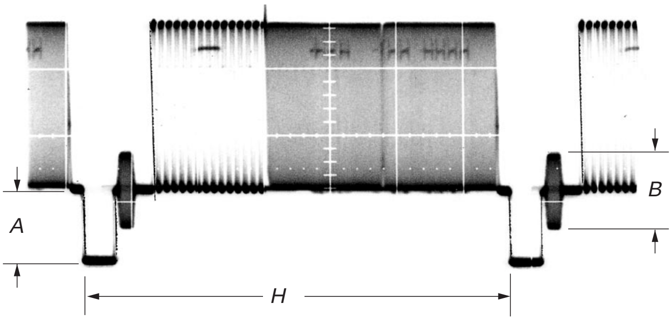


Fig. 5-3-10.

5. PLL Adjustment (VC-227 Board)

Set the VCO center level of the video input circuit (IC1200).

Mode	VTR stop
Signal	Color bar (Video terminal of AUDIO/ VIDEO jack input)
Measurement Point	Display data of page: 3, address: 04
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	AA
Specified Value	08 or 09 (Note 1) 08 or 09 or 0A (Note 2)

Note1: When the data of page: C, address: AA is “00” to “FE”.
Note2: When the data of page: C, address: AA is “FF”.

Adjusting method:

1) Input the color bar signal to the video terminal.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 0C, set data: 80, and press the PAUSE button of the adjustment remote commander.
4) Select page: C, address: AA, and set data: 00, and press the PAUSE button.
5) Select page: 3, address: 04, and check. If the data is “08” or “09”, proceed to step 8).
6) Select page: C, address: AA, add “10”(hexadecimal) to the data and press the PAUSE button.
   Note: If the data of page: C, address: AA is “F0”, change the data to “FF”, and press the PAUSE button.
7) Select page: 3, address: 04, and check the data satisfies the specified value. If not repeat steps 6) to 7).
8) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
9) Select page: 0, address: 01, and set data: 00.

3-4-2. BIST Check

1. Playback System Check

1-1. Preparation for Playback

1) Set the POWER switch to VTR position.
2) Connect the adjusting remote commander and set the HOLD switch to ON (SERVICE) position.
3) Playback the BIST check tape. (XH5-6(NTSC), XH5-6P(PAL))

Note: Perform the following checks in the playback mode.

1-2. IC1900(TRX) BIST(PB) Check

1) Select page: 3, address: 12, set data: 04, and press the PAUSE button.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
3) Select page: 3, address: 13, set data: 02, and press the PAUSE button.
4) When the playback system from IC1900(TRX) to IC1601(TFD) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data					
16	63	C5	75	D3	59	FF
17	84	55	07	D6	01	D0

PAL model

Address	Data		
16	86	AA	90
17	35	33	B6

1-3. IC1601(TFD) BIST(PB) Check

1) Select page: 3, address: 40, set data: 0F, and press the PAUSE button.
2) Select page: 3, address: 40, set data: 00, and press the PAUSE button.
3) When the playback system from IC1601(TFD) to IC1600(SFD) is normal, the display data (combination data) of page: 3, address: 41 and 42 agrees with any combination as shown below.

NTSC model

Address	Data
41	26
42	A1

PAL model

Address	Data
41	69
42	73

1-4. IC1600(SFD) BIST(PB) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: AC, set data: 21, and press the PAUSE button.
3) Select page: C, address: AD, set data: 03, and press the PAUSE button.
4) Select page: 3, address: 11, set data: 04, and press the PAUSE button.
5) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
6) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
8) When the playback system from IC1600(SFD) to IC2002 (ADC&DAC) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	41
15	81

PAL model

Address	Data
14	2D
15	7C

9) When the playback system from IC1600(SFD) to IC1602(LIP) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	1E	F0
17	B4	31

PAL model

Address	Data
16	1C
17	A6

10) When the playback system from IC1601(TFD) to IC1600(SFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data	
18	72	16
19	F8	5C

PAL model

Address	Data
18	CC
19	A7

11) Select page: 3, address: 11, set data: 80, and press the PAUSE button.
12) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
13) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
14) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
15) When the playback system from IC1601(TFD) to IC1600(SFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data	
18	E6	29
19	C3	B0

PAL model

Address	Data
18	DB
19	C0

16) When the playback system from IC1600(SFD) to IC1501(VFD) is normal, the display data (combination data) of page: 3, address: 1A and 1B agrees with any combination as shown below.

NTSC model

Address	Data
1A	12
1B	43

PAL model

Address	Data
1A	90
1B	CE

17) Select page: C, address: AC, set data: 20, and press the PAUSE button.
18) Select page: C, address: AD, set data: 02, and press the PAUSE button.
19) Select page: 0, address: 01, and set data: 00.

1-5. IC1501(VFD) BIST(PB) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 51, set data: 0F, and press the PAUSE button.
3) Select page: C, address: 60, set data: 00, and press the PAUSE button.

• VBUS/EX BIST(PB) Check

4) Select page: 3, address: 10, set data: 00, and press the PAUSE button.
5) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
6) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
8) When the playback system from IC1600(SFD) to IC1501(VFD) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	12
15	43

PAL model

Address	Data
14	90
15	CE

9) When the playback system from IC1501(VFD) to IC251 (CARILLON) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	FB
17	F4

PAL model

Address	Data
16	54
17	ED

• UPY Y BIST(PB) Check

10) Select page: 3, address: 10, set data: 88, and press the PAUSE button.
11) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
12) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
13) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
14) When the playback system from IC1501(VFD) to IC5000,8001 (LCD DRIVER) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	9A
17	13

PAL model

Address	Data
16	03
17	C9

• UPY Cr BIST(PB) Check

15) Select page: 3, address: 10, set data: 89, and press the PAUSE button.
16) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
17) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
18) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
19) When the playback system from IC1501(VFD) to IC5000,8001 (LCD DRIVER) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	1C
17	60

PAL model

Address	Data
16	14
17	A7

• UPY Cb BIST(PB) Check

20) Select page: 3, address: 10, set data: 8A, and press the PAUSE button.
21) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
22) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
23) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
24) When the playback system from IC1501(VFD) to IC5000,8001 (LCD DRIVER) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	92
17	5A

PAL model

Address	Data
16	B8
17	67

• ENC Ya BIST(PB) Check

25) Select page: 3, address: 10, set data: 8B, and press the PAUSE button.
26) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
27) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
28) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
29) When the playback system from IC1501(VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	3C
17	D2

PAL model

Address	Data
16	69
17	21

• ENC Yb BIST(PB) Check

30) Select page: 3, address: 10, set data: 8C, and press the PAUSE button.
31) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
32) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
33) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
34) When the playback system from IC1501(VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	83
17	9E

PAL model

Address	Data
16	CC
17	ED

• ENC Ca BIST(PB) Check

35) Select page: 3, address: 10, set data: 8D, and press the PAUSE button.
36) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
37) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
38) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
39) When the playback system from IC1501(VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	FE	22
17	68	CA

PAL model

Address	Data	
16	70	43
17	D5	E4

• ENC Cb BIST(PB) Check

40) Select page: 3, address: 10, set data: 8E, and press the PAUSE button.
41) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
42) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
43) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
44) When the playback system from IC1501(VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	B2	DE
17	E7	EE

PAL model

Address	Data	
16	ED	9A
17	CB	1E

45) Select page: C, address: 51, set data: 03, and press the PAUSE button.
46) Select page: C, address: 60, and set data: 08, and press the PAUSE button.
47) Select page: 0, address: 01, and set data: 00.

2. Recording System Check

2-1. Preparations for recording

1) Playback the BIST check tape.(XH5-6(NTSC), XH5-6P(PAL))
2) Select page: 3, address: 10, set data: C0, and press the PAUSE button.
3) Select page: 3, address: 11, set data: 07, and press the PAUSE button.
4) Enter the stop mode.
5) While keep the HOLD switch of the adjusting remote commander at ON(SERVICE) position, eject the BIST check tape and insert a tape for recording in place of the tape.
6) Enter the camera recording mode.
   Note: Perform the following checks in the camera recording mode.

2-2. IC1501(VFD) BIST(REC) Check

1) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
3) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
4) When the recording system from IC1501(VFD) to IC1600(SFD) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	D5
15	0B

PAL model

Address	Data
14	34
15	8A

2-3. IC1600(SFD) BIST(REC) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: AC, set data: 21, and press the PAUSE button.
3) Select page: C, address: AD, set data: 03, and press the PAUSE button.
4) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
5) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
6) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
7) When the recording system from IC1600(SFD) to IC1602(LIP) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data			
16	00	BC	4C	F0
17	15	CE	CF	14

PAL model

Address	Data			
16	2D	A2	61	EE
17	F5	7B	2F	1A

8) When the recording system from IC1600(SFD) to IC1601(TFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data			
18	F7	4F	54	EC
19	F6	69	80	1F

PAL model

Address	Data			
18	6C	23	01	4E
19	C7	76	0E	BF

9) Select page: 3, address: 11, set data: 87, and press the PAUSE button.
10) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
11) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
12) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
13) When the recording system from IC1600(SFD) to IC1601(TFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data	
18	C2	49
19	DB	21

PAL model

Address	Data	
18	F3	80
19	CA	79

14) When the recording system from IC1501(VFD) to IC1600(SFD) is normal, the display data (combination data) of page: 3, address: 1A and 1B agrees with any combination as shown below.

NTSC model

Address	Data
1A	D5
1B	0B

PAL model

Address	Data
1A	34
1B	8A

15) Select page: C, address: AC, set data: 20, and press the PAUSE button.
16) Select page: C, address: AD, set data: 02, and press the PAUSE button.
17) Select page: 0, address: 01, and set data: 00.

2-4. IC1601(TFD) BIST(REC) Check

1) Select page: 3, address: 40, set data: 0F, and press the PAUSE button.
2) Select page: 3, address: 40, set data: 00, and press the PAUSE button.
3) When the recording system from IC1600(SFD) to IC1601(TFD) is normal, the display data (combination data) of page: 3, address: 41 and 42 agrees with any combination as shown below.

NTSC model

Address	Data			
41	C2	7A	61	D9
42	42	DD	34	AB

PAL model

Address	Data			
41	55	1A	38	77
42	B5	04	7C	CD

4) When the recording system from IC1601(TFD) to IC1900(TRX) is normal, the display data (combination data) of page: 3, address: 43 and 44 agrees with any combination as shown below.

NTSC model

Address	Data			
43	18	C8	E0	57
44	F0	FB	02	D6

PAL model

Address	Data			
43	F6	A2	48	81
44	2A	E3	49	3D

2-5. IC1900(TRX) BIST(REC) Check

1) Select page: 3, address: 12, set data: 04, and press the PAUSE button.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
3) Select page: 3, address: 13, set data: 02, and press the PAUSE button.
4) When the recording system from IC1601(TFD) to IC1900(TRX) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data	
14	96	BC
15	D1	0E

PAL model

Address	Data	
14	27	B5
15	8D	61

3-5. IR TRANSMITTER ADJUSTMENTS

Adjust using a IR receiver jig (J-6082-383-A).

Switch setting:

LASER LINK .... ON (Red LED is lit)

1. IR Video Carrier Frequency Adjustment (MR-44 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN003 of IR receiver jig (RF) (Or Pin ⑯ of IC7501 of MR-44 board)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	28
Specified Value	f = 11.85 ± 0.05 MHz

Connection of Equipment

Connect the measuring device as shown in the following figure, and adjust.

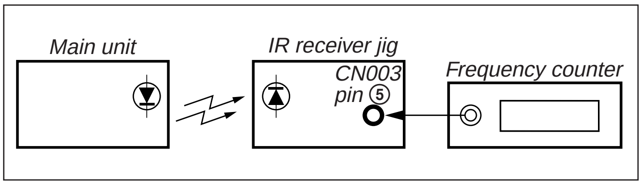


Fig. 5-3-11.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 08, and press the PAUSE button of the adjustment remote commander.
3) Select page: C, address: 28, change the data, and set the video carrier frequency (f) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
6) Select page: 0, address: 01, and set data: 00.

2. IR Video Deviation Adjustment (MR-44 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal of IR receiver jig (Terminated at 75 Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	29
Specified Value	A = 1.00 ± 0.05 V

Connection of Equipment:

Connect the measuring device as shown in the following figure, and adjust.

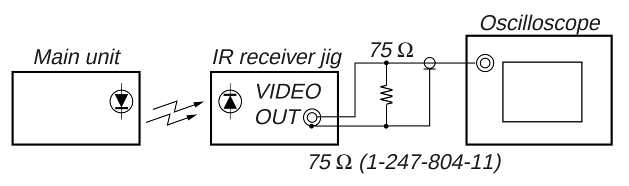


Fig. 5-3-12.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: C, address: 29, and change the data, set the video signal amplitude (A) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
6) Select page: 0, address: 01, and set data: 00.

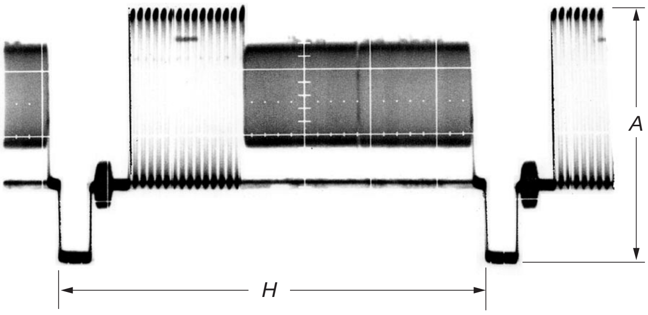
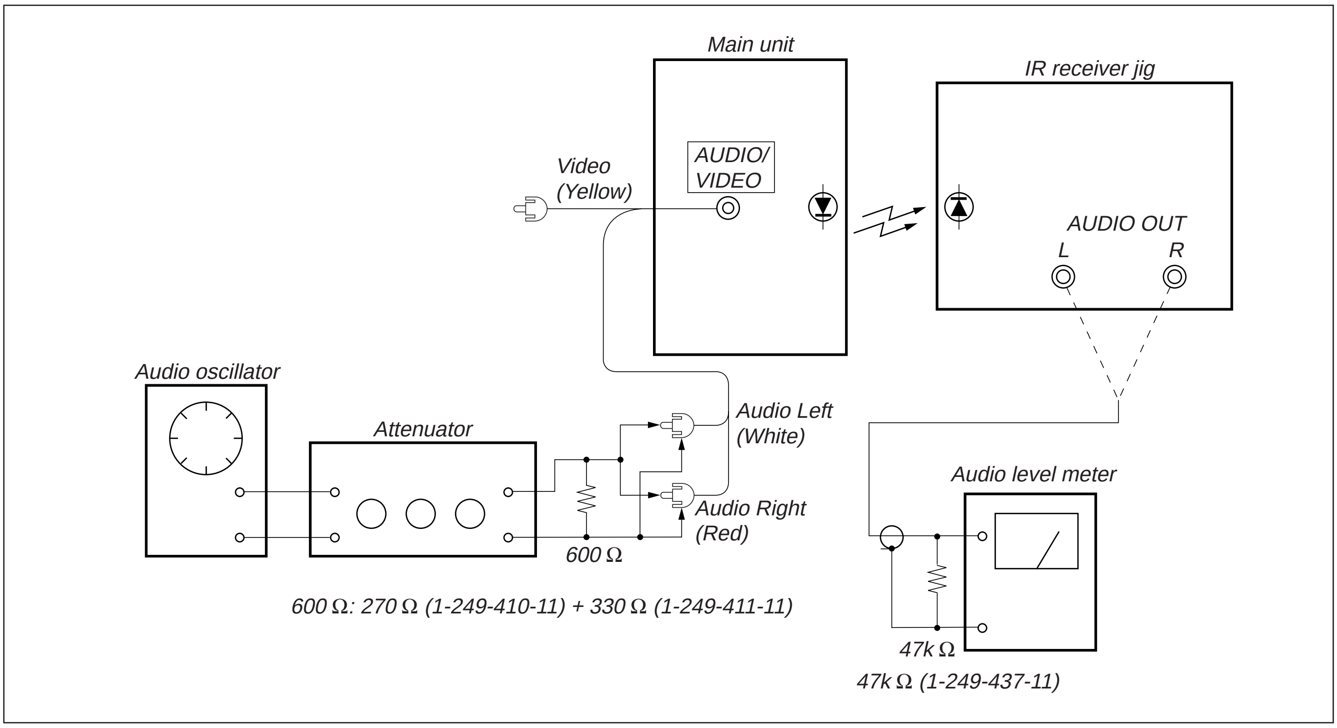


Fig. 5-3-13.

3. IR Audio Deviation Adjustment (MR-44 board)

Mode	VTR stop
Signal	Video : No signal Audio : –400Hz, –7.5dBs, Audio left and right terminal of AUDIO/VIDEO jack
Measurement Point	AUDIO L terminal and AUDIO R terminal of IR receiver jig (Terminated at 47kΩ)
Measuring Instrument	Audio level meter
Adjustment Page	C
Adjustment Address	2A
Specified Value	Signal level: –7.5 ± 1.0 dBs Level difference of L and R: Below 2dB

Connection of Equipment:
Connect the measuring device as shown in the following figure, and adjust.



Main unit
IR receiver jig
Video
(Yellow)
AUDIO/
VIDEO
AUDIO OUT
L
R
Audio oscillator
Attenuator
Audio Left
(White)
Audio Right
(Red)
600 Ω
Audio level meter
47k Ω

600 Ω: 270 Ω (1-249-410-11) + 330 Ω (1-249-411-11)

47k Ω (1-249-437-11)

Fig. 5-3-14.

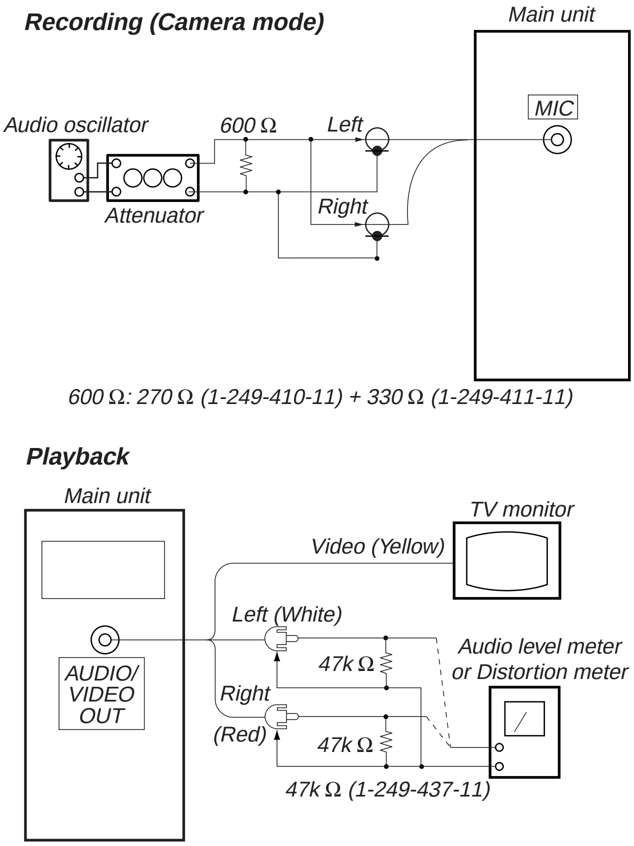
Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Connect the audio level meter to the AUDIO L terminal of the IR receiver jig.
3) Select page: C, address: 2A, change the data and set the 400Hz audio signal level to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Connect the audio level meter to the AUDIO R terminal of the IR receiver jig.
6) Check that the 400Hz audio signal level is within the specified value. If outside, repeat from step 3).
7) Select page: 0, address: 01, and set data: 00.

3-6. AUDIO SYSTEM ADJUSTMENTS

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 5-3-15



Recording (Camera mode)
Main unit
MIC
Audio oscillator
600 Ω
Left
Right
Attenuator
600 Ω: 270 Ω (1-249-410-11) + 330 Ω (1-249-411-11)
Playback
Main unit
TV monitor
Video (Yellow)
Left (White)
AUDIO/
VIDEO
OUT
47k Ω
Audio level meter
or Distortion meter
Right
(Red)
47k Ω
47k Ω (1-249-437-11)

Fig. 5-3-15.

1. Playback Level Check

Mode	VTR playback
Signal	Alignment tape: For audio operation check (XH5-3 (NTSC)) (XH5-3P (PAL))
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:

1) Check that the playback signal level is the specified value.

2. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, –66 dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

3. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

4. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: Insert a shorting plug in the MIC jack
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

1) Insert a shorting plug in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the noise level is the specified value.

5. Overall Separation Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack <right> [left] (Connect the MIC jack <left> [right] to GND)
Measurement Point	Audio <left> [right] terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs (IHF-A filter ON)

< > : Left channel check

[ ] : Right channel check

Checking Method:

1) Input the 400Hz, –66dBs signal in the <right> [left] terminal of the MIC jack only.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the signal level of the audio <left> [right] terminal is the specified value.

5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjustment remote commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.

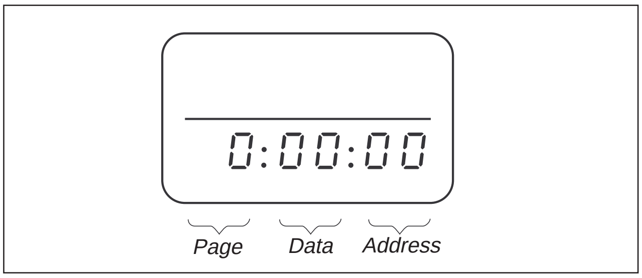


Fig. 5-4-1

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (B, C, D, F, 7 page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

2. Precautions upon using the adjustment remote commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Lower digit of hexadecimal Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1.

4-3. SERVICE MODE

1. Setting the Test Mode

Page D	Address 10

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON
03	Forced camera + VTR power ON
05	Forced memory power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

Page C	Address 38 to 43

Address	Contents
38	EMG code when first error occurs
3A	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
3B	Lower: MSW code to be moved when first error occurs
3C	EMG code when second error occurs
3E	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
3F	Lower: MSW code to be moved when second error occurs
40	EMG code when last error occurs
42	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
43	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (38 to 43). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (38 to 3B). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (3C to 3F). Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (40 to 43).

Note: After completing adjustments, be sure to initialize the data of addresses 38 to 43 to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 38, set data: 00, and press the PAUSE button.
3) Select address: 39 to 43 and set data: “00” into them in same way as in address: 38.
4) Select page: 0, address: 01, and set data: 00.

2-1. EMG Code (Emergency Code)

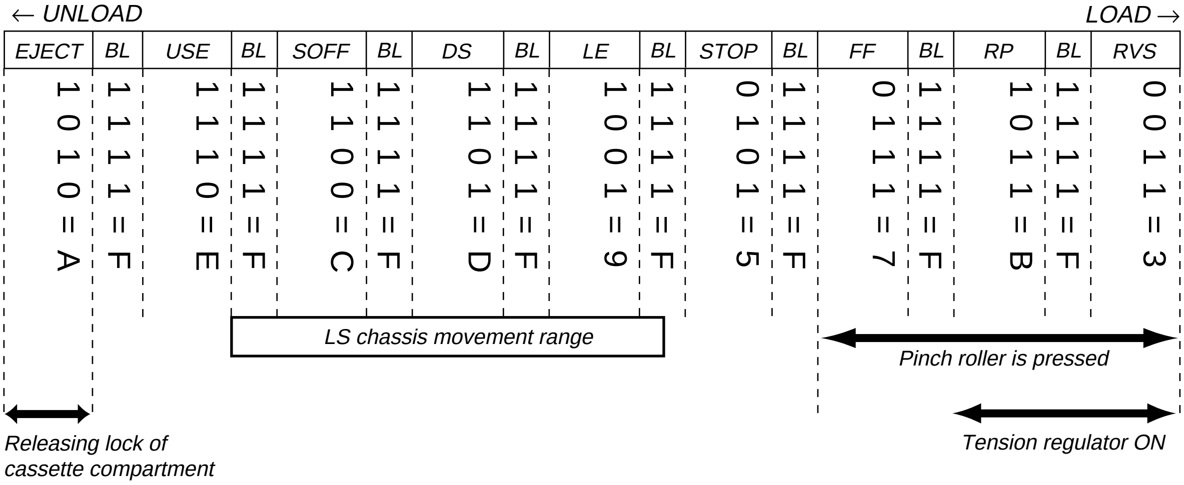
Codes corresponding to the errors which occur are written in addresses 38, 3C and 40. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

2-2. MSW Code

MSW when errors occur:
Information on MSW (mode SW) when errors occur
MSW when movement starts:
Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)
MSW of target of movement:
Information on target MSW of movement when the mechanism position is moved

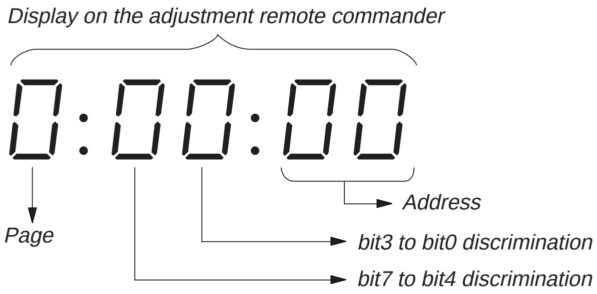
Mechanism Position


← UNLOAD
LOAD →
EJECT
BL
USE
BL
SOFF
BL
DS
BL
LE
BL
STOP
BL
FF
BL
RP
BL
RVS
1010 = A
1111 = F
1110 = E
1111 = F
1100 = C
1111 = F
1101 = D
1111 = F
1001 = 9
1111 = F
0101 = 5
1111 = F
0111 = 7
1111 = F
1011 = B
1111 = F
0011 = 3
LS chassis movement range
Pinch roller is pressed
Releasing lock of cassette compartment
Tension regulator ON

Position	Code	Contents
EJECT	A	Position at which the cassette compartment lock is released, and position at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	F	BLANK code, at the boundary between codes. The mechanism will not stop at this code during operations. (Excluding LOAD/UNLOAD)
USE	E	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SOFF	C	Code during loading. Code outputs while the LS chassis is moving.
DS	D	LS operations and guide loading are performed here.
LE	9	Current limiter is turned off.
STOP	5	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
FF	7	FF position. The tension regulator is half on. This position is not used except for the FF mode.
RP	B	PB, REC, CUE, Pause, FX2, FWD-SLOW positions. When the pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
RVS	3	Reverse running position. REW, REV, RX1, RX2, and RVS-SLOW are performed at this position.
NULL	0	Code not existing in the MD. When errors occur when the loading motor is not driving, this code is memorized.

3. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.


Display on the adjustment remote commander
0:00:00
Address
Page
bit3 to bit0 discrimination
bit7 to bit4 discrimination

	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

4. Switch check (1)

Page 2	Address 43

Bit	Function	When bit value=1	When bit value=0
0	VTR MODE SW (FK-4950 block S1007)	OFF	ON
1	CAM STBY SW (FK-4950 block S1007)	OFF	ON
2	START/STOP SW (FK-4950 block S1008)	OFF	ON
3	EJECT SW (FK-4950 block S1059)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5	PHOTO FREEZE SW (FK-4950 block S1054)	OFF	ON
6	PHOTO STBY SW (FK-4950 block S1007)	OFF	ON
7			

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

5. Switch check (2)

Page 2	Address 60 to 67

Using method:

1) Select page:2, address: 60 to 67.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data						
	00 (00 to 0A)	19 (0B to 24)	32 (25 to 44)	59 (45 to 6E)	85 (6F to 9F)	B8 (A0 to D4)	EE (D5 to FF)
60 (KEY AD0) (IC2204 (93))	STOP (FK-4950 block) (S1009)	REW (FK-4950 block) (S1010)	PLAY (FK-4950 block) (S1011)	FF (FK-4950 block) (S1012)	REC (FK-4950 block) (S1013, 1014)		No key input
61 (KEY AD1) (IC2204 (94))	EXECUTE (FK-4950 block) (S1050)				START/STOP MODE 5SEC REC (FK-4950 block) (S1051)	START/STOP MODE PUSH REC (FK-4950 block) (S1051)	START/STOP MODE NORMAL (FK-4950 block) (S1051)
62 (KEY AD2) (IC2204 (95))	PAUSE (FK-4950 block) (S1001)	EXPOSURE (FK-4950 block) (S1002)	FADER (FK-4950 block) (S1003)	BACK LIGHT (FK-4950 block) (S1004)	SELF TIMER (FK-4950 block) (S1005)		No key input
63 (KEY AD3) (IC2204 (96))	PHOTO (PHOTO REC) (FK-4950 block) (S1055)	LASER LINK (FK-4950 block) (S1006)		+SLOW SHUTTER (FK-4950 block) (S1056)	FOCUS (INFINITY) (FK-4950 block) (S1058)	FOCUS (AUTO/MANUAL) (FK-4950 block) (S1057)	No key input
64 (KEY AD4) (IC2204 (97))	END SEARCH (ME-4950 block) (S1102)	DISPLAY (ME-4950 block) (S1110)	MENU (ME-4950 block) (S1107)	TITLE (ME-4950 block) (S1108)	VOLUME+ (ME-4950 block) (S1103)	VOLUME– (ME-4950 block) (S1104)	No key input
65 (KEY AD5) (IC2204 (98))	MEMORY+ (ME-4950 block) (S1111)	MEMORY– (ME-4950 block) (S1112)	MEMORY INDEX (FK-4950 block) (S1105)	MEMORY DELETE (ME-4950 block) (S1109)	MEMROY PLAY (ME-4950 block) (S1101)	DIGITAL EFFECT (ME-4950 block) (S1106)	No key input
66 (KEY AD6) (IC2204 (99))	PANEL REVERSE (FP-129 board) (S001)						PANEL NORMAL (FP-129 board) (S001)
67 (KEY AD7) (IC2204 (100))	PANEL OPEN (FP-129 board) (S002)						PANEL CLOSE (FP-129 board) (S002)

6. Record of Use check

Page 2	Address A2 to AA

Address	Function		Remarks
A2	Drum rotation counted time (BCD code)	Minutes	
A3		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4		Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A5	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next.
A6		Month	
A7		Day	
A8	Final condensation occurrence date (BCD code)	Year	
A9		Month	
AA		Day	

Using method:

1) The record of use data is displayed at page: 2, addresses: A2 to AA.
   Note: This data will be erased (reset) when the cabinet (L) assy (Control switch block (FK-4950)) is removed.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

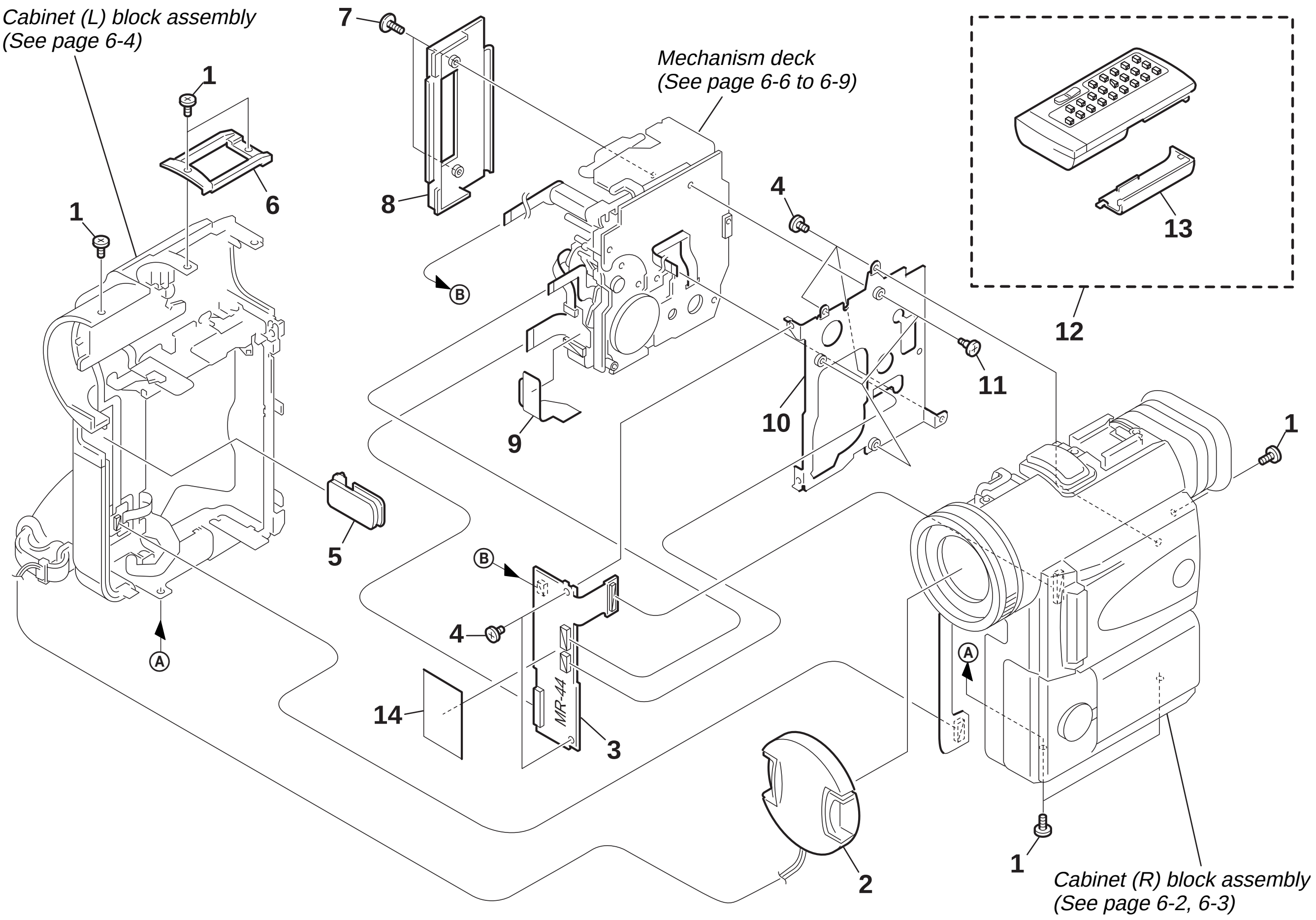
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Abbreviation
  - AUS: Australian model
  - JE: Tourist model
  - CND: Canadian model
  - CN: Chinese model
  - HK: Hong Kong model
  - KR: Korea model
- Model
  - 100: DCR-PC100
  - 100E: DCR-PC100E

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

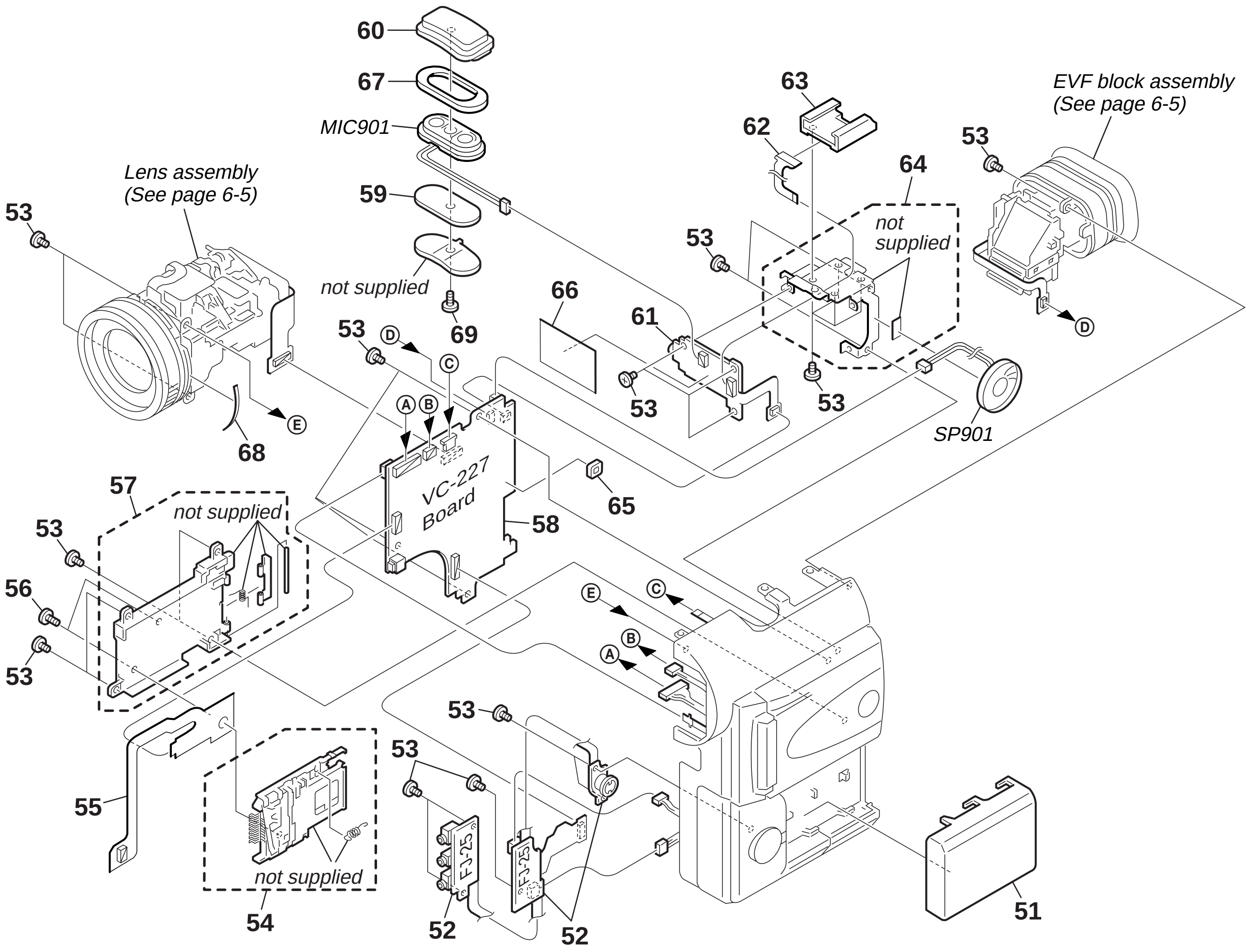
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. CABINET (R) SECTION-1


Cabinet (L) block assembly
(See page 6-4)
7
1
6
8
1
Mechanism deck
(See page 6-6 to 6-9)
4
13
12
B
11
1
10
9
5
B
4
A
MR-44
14
3
A
2
1
Cabinet (R) block assembly
(See page 6-2, 6-3)

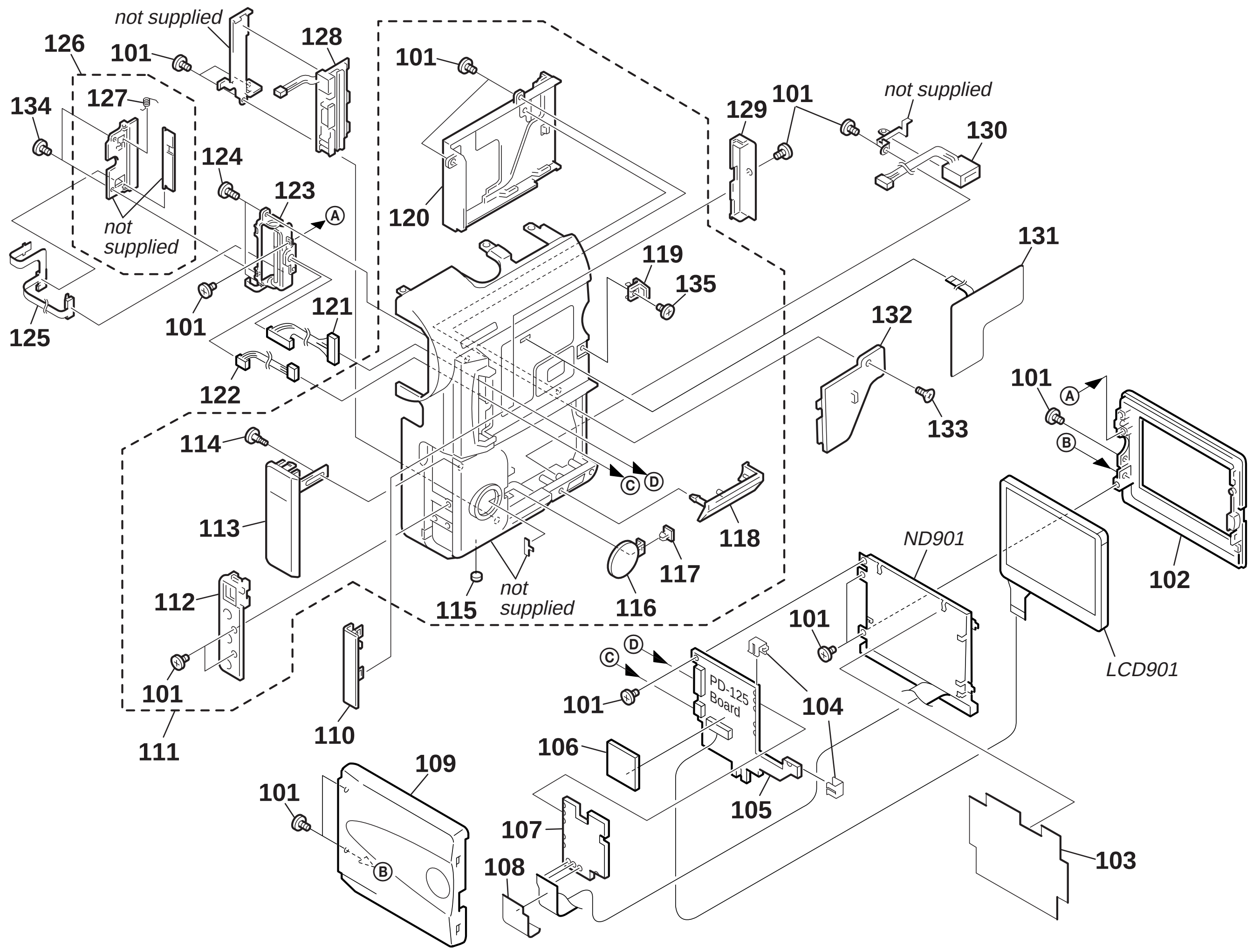
Ref. No.	Part No.	Description	Remarks
1	3-989-735-31	SCREW(M1.7), LOCK ACE, P2	
2	X-3949-944-1	CAP ASSY, LENS	
3	A-7074-103-A	MR-44 BOARD,COMPLETE	
4	3-989-735-11	SCREW(M1.7), LOCK ACE, P2	
5	3-057-421-01	WINDOW, IR	
6	3-057-440-01	COVER, SHOE	
7	3-719-695-21	SCREW(M1.7X3.5), SPECIAL HEAD	
8	X-3947-927-1	COVER ASSY	
* 9	3-057-946-01	SHEET, CAP FLEXIBLE	
10	X-3949-947-1	FRAME ASSY, MD	
11	3-988-464-01	SCREW (M2), STEP	
12	1-475-950-21	REMOTE COMMANDER(RMT-811)	
13	3-053-056-01	LID,BATTERY CASE	
* 14	3-057-948-01	SHEET, MR	

6-1-2. CABINET (R) SECTION-2


60
67
MIC901
59
not supplied
69
63
62
64
not supplied
EVF block assembly
(See page 6-5)
53
Lens assembly
(See page 6-5)
53
66
61
53
53
D
53
D
C
A
B
53
53
E
68
SP901
57
not supplied
VC-227 Board
58
65
53
56
53
E
C
B
A
53
53
55
not supplied
54
52
FJ-25
52
51

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-057-482-01	COVER, BATTERY		61	A-7074-105-A	MA-367 BOARD,COMPLETE	
52	A-7074-106-A	FJ-25 BOARD,COMPLETE		62	1-675-717-11	FP-130 FLEXIBLE BOARD	
53	3-989-735-11	SCREW (M1.7), LOCK ACE, P2		63	1-785-594-11	CONNECTOR (HOT SHOE), OUTER	
54	1-785-593-21	CONNECTOR, MEMORY STICK		64	X-3949-943-1	BRACKET ASSY, SHOE	
55	1-675-715-21	FP-128 FLEXIBLE BOARD		* 65	3-057-438-01	CUSHION, LIGHT INTERCEPTION	
56	3-713-791-71	SCREW (M1.7X4)		* 66	3-057-948-01	SHEET, MR	
57	X-3949-938-1	HOLDER ASSY, MS		67	3-058-571-01	SHEET(2),MICROPHONE	
58	A-7074-108-A	VC-227 BOARD,COMPLETE (100)		68	3-058-572-01	CUSHION, ACOUSTIC ABSORBENT	
58	A-7074-198-A	VC-227P BOARD,COMPLETE (100E)		69	3-713-791-01	SCREW (M1.7X5), TAPPING, P2	
* 59	3-057-949-01	SHEET, MICROPHONE		MIC901	1-475-975-21	MICROPHONE UNIT	
60	X-3949-939-1	HOLDER ASSY, MICROPHONE		SP901	1-529-547-11	SPEAKER (2.0 CM)	

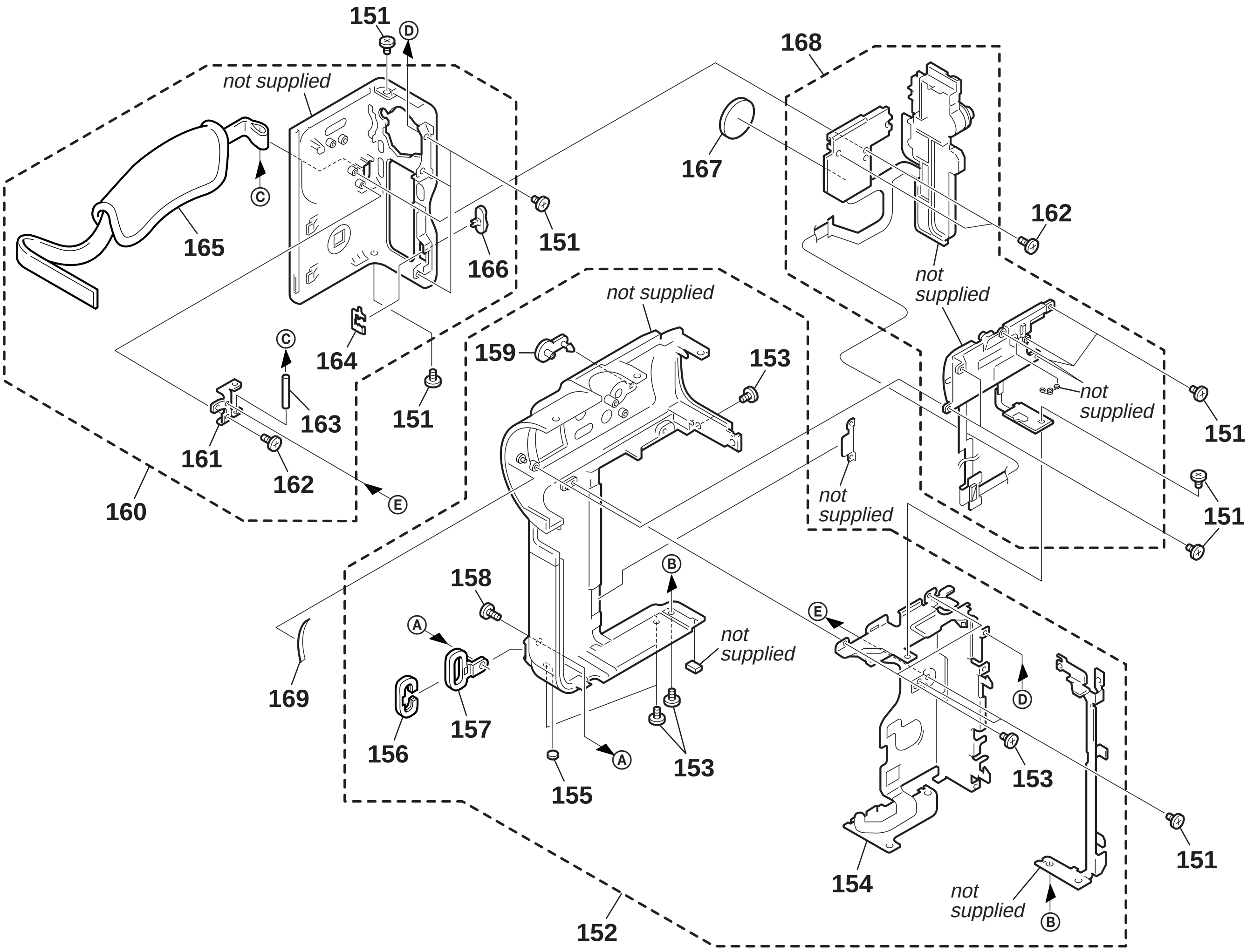
6-1-3. CABINET (R) SECTION-3


not supplied
126
101
128
101
134
127
not supplied
124
123
A
120
129
101
not supplied
130
131
119
135
125
101
121
132
122
101
A
B
133
114
C
D
113
118
ND901
117
102
112
115
not supplied
116
101
D
C
LCD901
101
PD-125 Board
101
104
111
110
106
109
101
105
107
B
108
103

Ref. No.	Part No.	Description	Remarks
101	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
102	X-3949-934-1	CABINET (L) ASSY, LCD	
103	3-055-797-01	SHEET, BL SHIELD	
* 104	3-051-232-01	CLIP, PCB	
105	A-7074-107-A	PD-125 BOARD,COMPLETE	
* 106	3-057-410-01	CUSHION, PD	
⚠107	1-418-517-11	TRANSFORMER UNIT, INVERTER	
108	3-055-798-01	SHEET, BL INSULATING	
109	X-3949-952-1	CABINET (R) ASSY, LCD	
110	3-057-403-01	COVER (FRONT), HINGE	
111	X-3949-948-1	CABINET (R) ASSY (100)	
111	X-3949-953-1	CABINET (R) ASSY (100E:AEP,UK)	
111	X-3949-955-1	CABINET (R) ASSY (100E:E,HK,JE,AUS,CN)	
* 112	3-057-418-11	PLATE, JACK ORNAMENTAL (100)	
* 112	3-057-418-21	PLATE, JACK ORNAMENTAL (100E)	
113	X-3949-941-1	COVER ASSY, JACK	
114	3-989-859-01	SCREW (M1.7) STEP, HEAD	
115	3-969-387-01	FOOT, RUBBER	
116	3-057-415-01	COVER, S TERMINAL	
117	3-057-445-01	RETAINER, S TERMINAL COVER	
118	3-057-419-01	COVER, DC JACK	
119	3-057-422-01	BASE, LCD LOCK	
120	X-3949-937-1	HOLDER ASSY, BATTERY	
121	1-959-987-11	HARNESS (PT-126) 13PIN	
122	1-959-986-11	HARNESS (PT-125) 4PIN	
123	X-3949-935-1	HINGE ASSY	
124	3-989-735-31	SCREW (M1.7), LOCK ACE, P2	
125	1-675-716-21	FP-129 FLEXIBLE BOARD	
126	X-3949-946-1	PLATE ASSY, BLIND	
* 127	3-055-323-01	SPRING (MK), TORSION	
128	1-694-493-21	TERMINAL BOARD, BATTERY	
129	3-057-404-01	COVER (REAR), HINGE	
130	1-785-247-31	CONNECTOR, DC-IN	
131	1-418-681-21	SWITCH BLOCK, CONTROL(ME-4950)	
132	3-057-430-01	LID, CPC	
* 133	3-057-437-01	LOCK ACE (M1.7)	
134	3-052-027-01	BOLT (M1.7), SPRING	
135	3-051-390-01	SCREW (M1.7)	
LCD901	8-753-050-13	ACX300AK-J	
⚠ND901	1-517-877-21	TUBE, FLUORESCENT,COLD CATHODE	

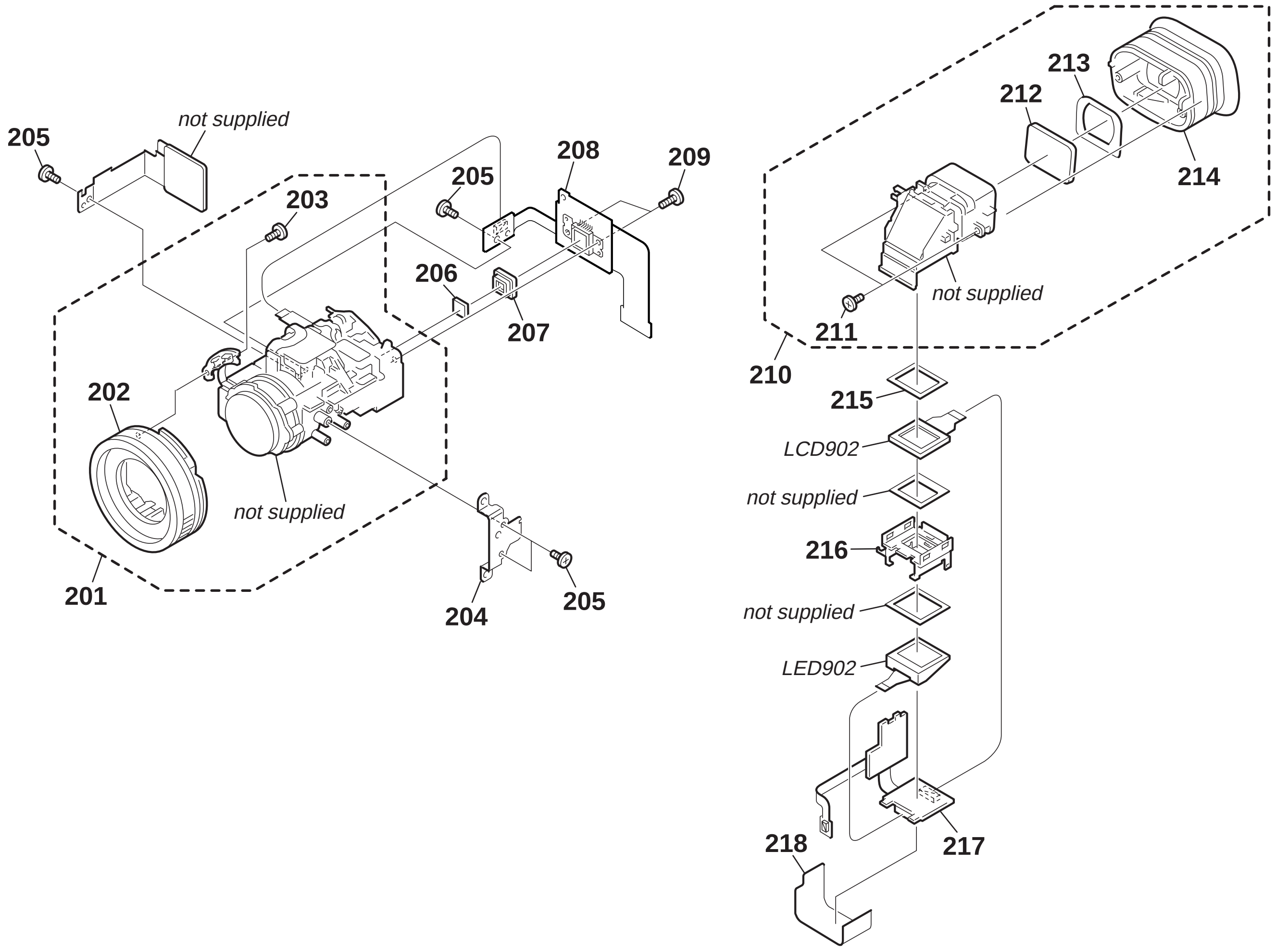
Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-4. CABINET (L) BLOCK ASSEMBLY


151
D
168
not supplied
167
162
C
165
166
151
not supplied
not supplied
159
153
C
164
not supplied
151
163
151
161
162
not supplied
E
160
151
158
B
E
A
not supplied
D
169
157
156
A
153
153
155
151
154
not supplied
B
152

Ref. No.	Part No.	Description	Remarks
151	3-989-735-91	SCREW (M1.7), LOCK ACE, P2	
152	X-3949-950-1	CABINET (L) (ASSY-M)	
153	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
154	X-3949-936-1	SHEET METAL ASSY, GRIP	
155	3-969-387-01	FOOT, RUBBER	
* 156	3-978-785-01	CAP, BRACKET	
* 157	3-978-784-01	BRACKET, STRAP	
158	3-713-786-21	SCREW (M2X3)	
159	3-057-461-01	COVER (MA), JACK	
160	X-3949-951-1	CABINET (G) ASSY (100)	
160	X-3949-954-1	CABINET (G) ASSY (100E)	
* 161	3-057-467-01	BRACKET (REAR), BELT	
162	3-713-791-71	SCREW (M1.7X4)	
* 163	3-703-357-05	PIN, PARALLEL (DIA. 1.6X8)	
164	3-057-464-01	SLIDER, G LOCK	
165	3-978-789-01	BELT, GRIP	
166	3-057-463-01	KNOB, G EJECT	
167	1-528-724-21	BATTERY, V/L RECHARGEABLE	
168	1-418-680-21	SWITCH BLOCK, CONTROL(FK-4950)	
169	3-058-572-01	CUSHION, ACOUSTIC ABSORBENT	

6-1-5. LENS ASSEMBLY, EVF BLOCK ASSEMBLY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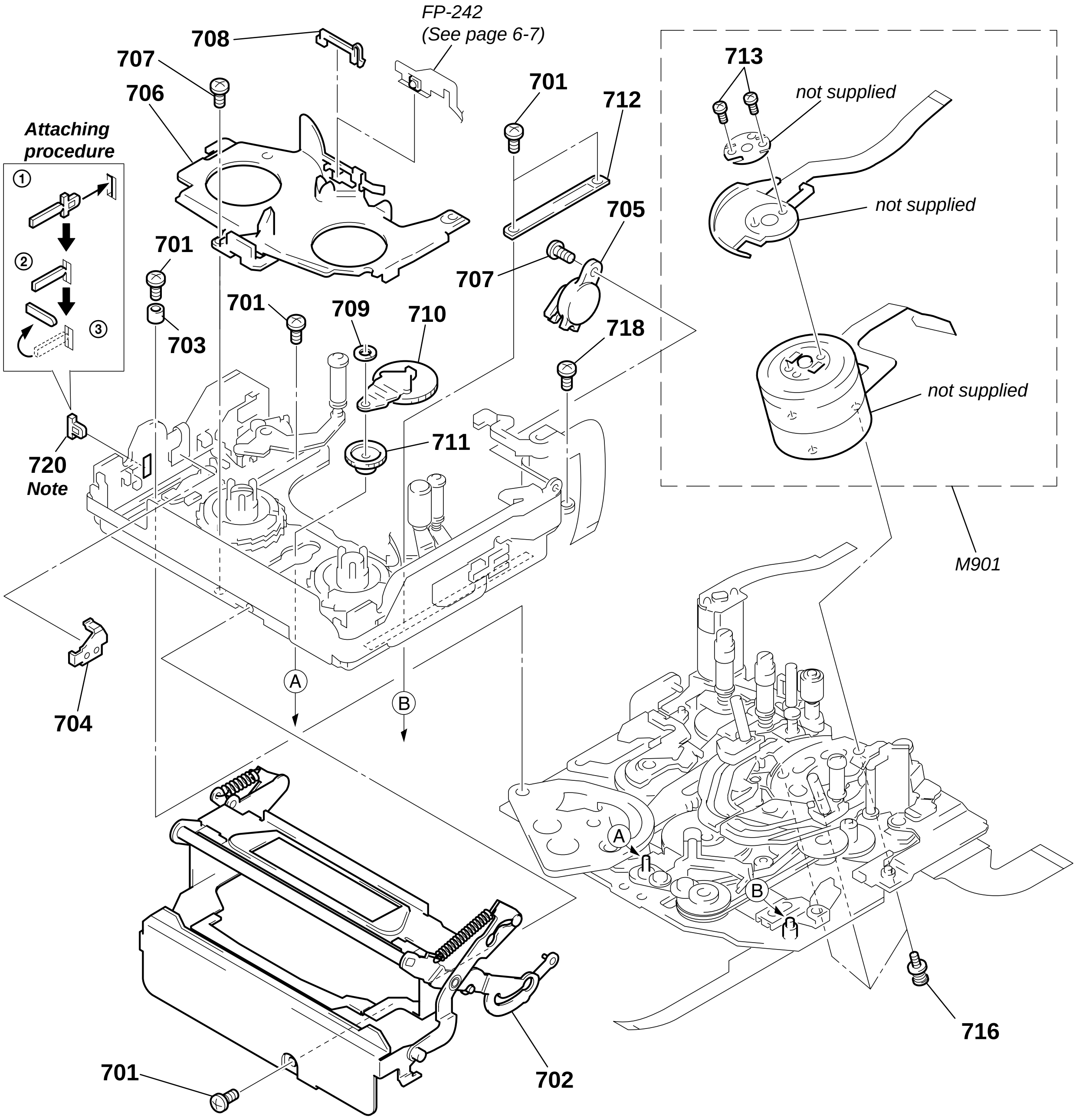
not supplied
203
205
208
209
206
207
202
not supplied
201
204
205
213
212
214
not supplied
211
210
215
LCD902
not supplied
216
not supplied
LED902
218
217

The CCD imager cannot be replaced as an independent part.
Replace the entire CD-234 board (including the CCD imager).

Ref. No.	Part No.	Description	Remarks
201	8-848-734-01	DEVICE, LENS LSV-660A	
202	A-7031-034-A	RING BLOCK ASSY, MF	
203	3-713-791-91	SCREW (M1.7)	
* 204	3-057-442-01	FRAME, LENS	
205	3-713-791-71	SCREW (M1.7X4)	
206	1-758-353-11	FILTER BLOCK, OPTICAL	
207	3-053-973-01	RUBBER (W), SEAL	
208	A-7031-039-A	CCD/CD BLOCK ASSY(SERVICE USE) (100)	
208	A-7031-059-A	CCD/CD BLOCK ASSY(SERVICE USE) (100E)	
209	3-318-203-11	SCREW (B1.7X6), TAPPING	
210	X-3949-940-1	HOLDER ASSY, VF	
211	3-719-401-11	SCREW (B1.7), TAPPING	
* 212	3-057-471-01	WINDOW, VF	
* 213	3-057-474-01	SPACER, VF	
214	X-3950-078-1	CAP ASSY(SERVICE USE),EYE	
215	3-960-302-11	CUSHION (1), LCD	
216	3-057-477-01	LID, VF HOLDER	
217	A-7074-104-A	VF-138 BOARD,COMPLETE	
* 218	3-057-987-01	SHEET, VF BLIND	
LCD902	8-753-023-51	LCX027AK-J	
LED902	1-475-980-11	BLOCK, LIGHT GUIDE PLATE	

6-1-6. CASSETTE COMPARTMENT AND DRUM ASSY SECTION


708
707
706
Attaching procedure
①
②
③
FP-242
(See page 6-7)
701
712
713
not supplied
not supplied
not supplied
705
707
701
703
701
709
710
718
711
720
Note
M901
A
B
704
A
B
716
701
702

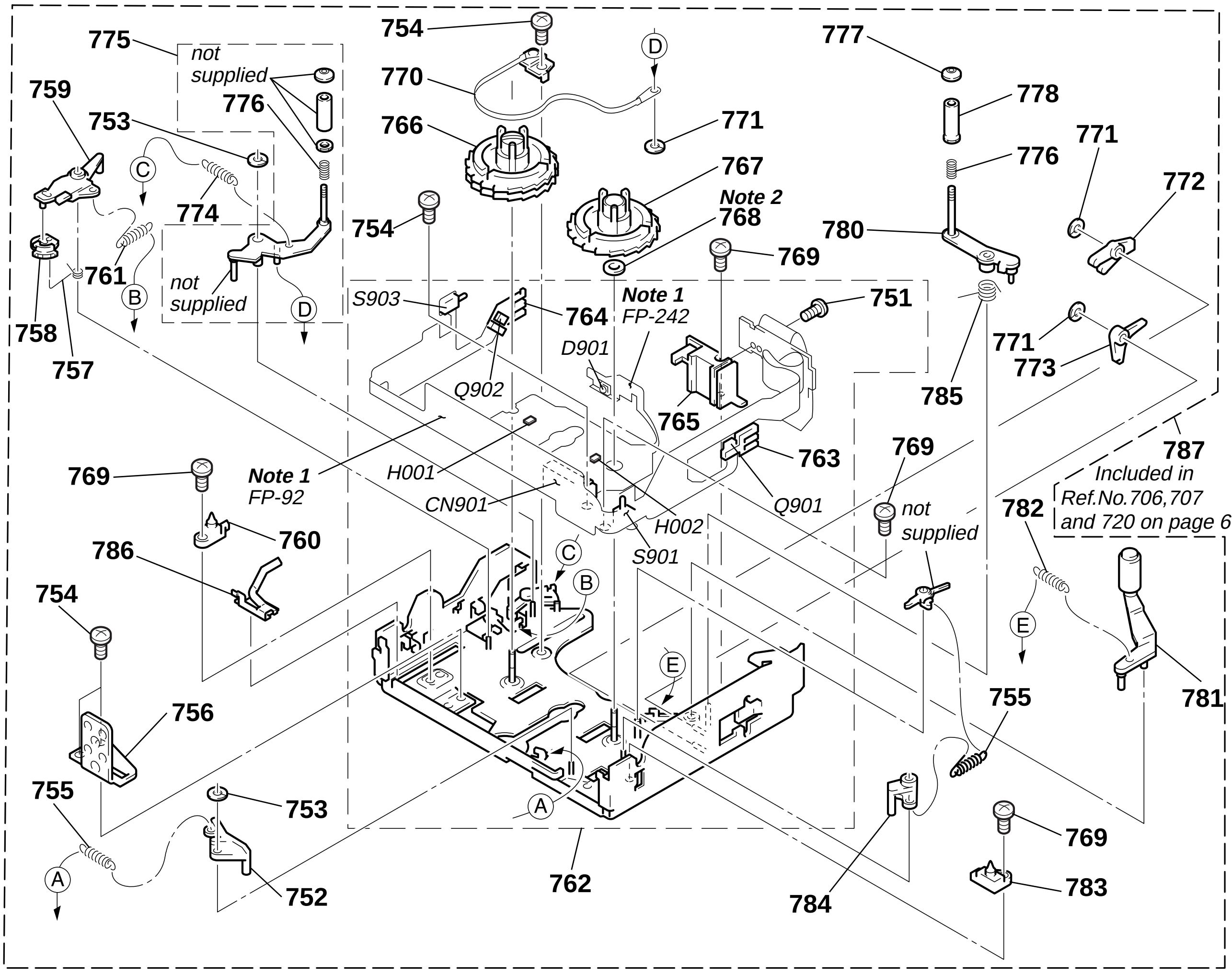
Note: *Once remove No. 720 CC fastener, don't use it again.*
Be sure to replace it with new one.
(Attaching procedure is as shown above figure.)

Ref. No.	Part No.	Description	Remarks
701	3-728-103-11	SCREW (M1.4X1.6)	
702	X-3949-140-1	CASSETTE COMPARTMENT ASSY	
703	3-748-703-01	COLLAR	
* 704	3-976-449-02	COVER, CC SWITCH	
705	3-976-446-01	DAMPER	
706	X-3748-613-3	BASE ASSY, LED	
707	3-054-065-11	BOLT (M1.4)	
708	3-748-683-01	HOLDER, LED	
709	3-315-414-31	WASHER	
710	X-3947-150-1	GOOSENECK ASSY (2)	
711	3-748-736-01	GEAR, RELAY	
712	3-748-702-02	SLIDER, CAM	
713	3-962-920-01	SCREW(M1.4X2.1)	
716	A-7026-009-B	SCREW ASSY, DRUM FITTING	
718	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
* 720	3-979-009-03	FASTENER, CC	
M901	A-7048-901-A	DRUM BLOCK ASSY(DEH-07F-R)	

6-1-7. LS CHASSIS SECTION

Note 1: About FP-242 and FP-92
The FP-242 and FP-92 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 chassis (D3) assy, LS block section, They are not supplied separately because the high precision for installation is needed.

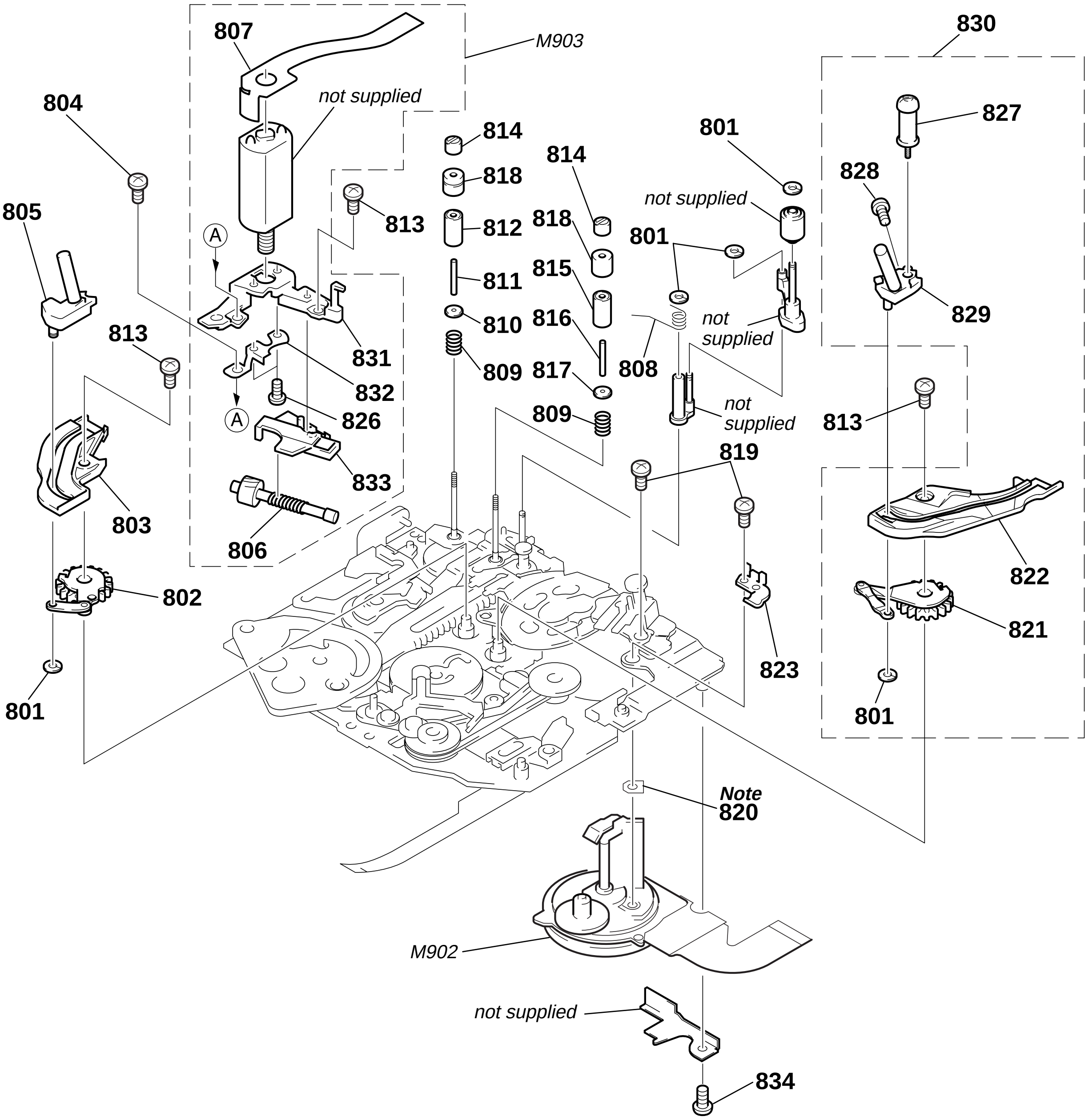
Note 2: Selecting the T washer
Select proper parts for the Ref. No. 768 T washer according to “Height adjustment for T reel table assembly” on page 23 in the “DV MECHANICAL ADJUSTMENT MANUAL Ⅰ” (9-973-815-11).


775
not supplied
759
753
776
774
761
758
757
not supplied
C
B
D
754
770
766
D
771
767
Note 2
768
754
S903
764
Q902
Note 1
FP-242
D901
769
751
765
763
Q901
777
778
776
771
772
780
771
773
785
787
Included in Ref.No.706,707 and 720 on page 6-6.
769
not supplied
782
E
781
755
769
783
784
762
A
752
753
755
A
756
754
786
760
769
Note 1
FP-92
H001
CN901
H002
S901
C
B
E

Ref. No.	Part No.	Description	Remarks
751	3-338-687-41	SCREW(1.4),+P TAPPING(B)	
752	3-748-775-03	BRAKE, RVS	
753	3-315-414-31	WASHER	
754	3-728-103-11	SCREW (M1.4X1.6)	
755	3-748-776-01	SPRING, TENSION	
756	3-748-681-01	PLATE, LS CAM	
757	3-748-774-01	SPRING, TORSION	
758	3-748-773-04	HARD, S	
759	3-748-815-06	ARM, S BRAKE	
760	3-748-677-01	POSITIONING, S	
761	3-968-656-01	SPRING, TENSION	
762	A-7094-279-A	CHASSIS (D3) ASSY, LS	
763	3-976-458-01	HOLDER (T), SENSOR	
764	3-976-644-01	SENSOR, HOLDER, S	
765	3-054-790-01	HOLDER, FPC	
766	X-3748-614-2	TABLE ASSY, REEL, S	
767	X-3748-615-2	TABLE ASSY, REEL, T	
768	3-748-682-01	WASHER, T (t=0.25(GREEN))	
768	3-748-682-11	WASHER, T (t=0.1 (YELLOW))	
768	3-748-682-21	WASHER, T (t=0.35(BLACK))	
769	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
770	X-3748-618-2	BAND ASSY, TENSION REGULATOR	
771	3-315-384-11	WASHER, STOPPER	
772	3-748-680-01	FOLLOWER, SLIDER	
773	3-748-679-01	LEVER, LOCK	
774	3-748-822-02	SPRING, EXTENSION	
775	A-7026-020-B	ARM BLOCK ASSY,	
776	3-940-891-01	SPRING, COMPRESSION	
777	3-966-194-01	FLANGE, TG7 UPPER	
778	3-057-819-01	TG7	
780	X-3748-616-2	ARM ASSY, TG7	
781	X-3748-630-2	ARM ASSY, PINCH	
782	3-748-603-01	SPRING, TENSION	
783	3-748-678-01	POSITIONING, T	
784	3-748-778-02	BRAKE, T HARD	
785	3-748-675-01	SPRING, TORSION	
786	3-973-067-01	SPRING,CASSETTE COMPARTMENT UP	
787	A-7026-032-A	BLOCK ASSY LS D3 CHASSIS(SERVICE)	
CN901	1-770-312-11	CONNECTOR 4P (MIC)	
D901	8-719-050-98	DIODE LN57.SO (TAPE LED)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (S REEL SENSOR)	
H002	8-719-071-98	ELEMENT, HALL HW-105C-FT-V-R (T REEL SENSOR)	
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)	
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)	
S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)	
S903	1-572-467-21	SWITCH, PUSH (1 KEY)(CC DOWN)	

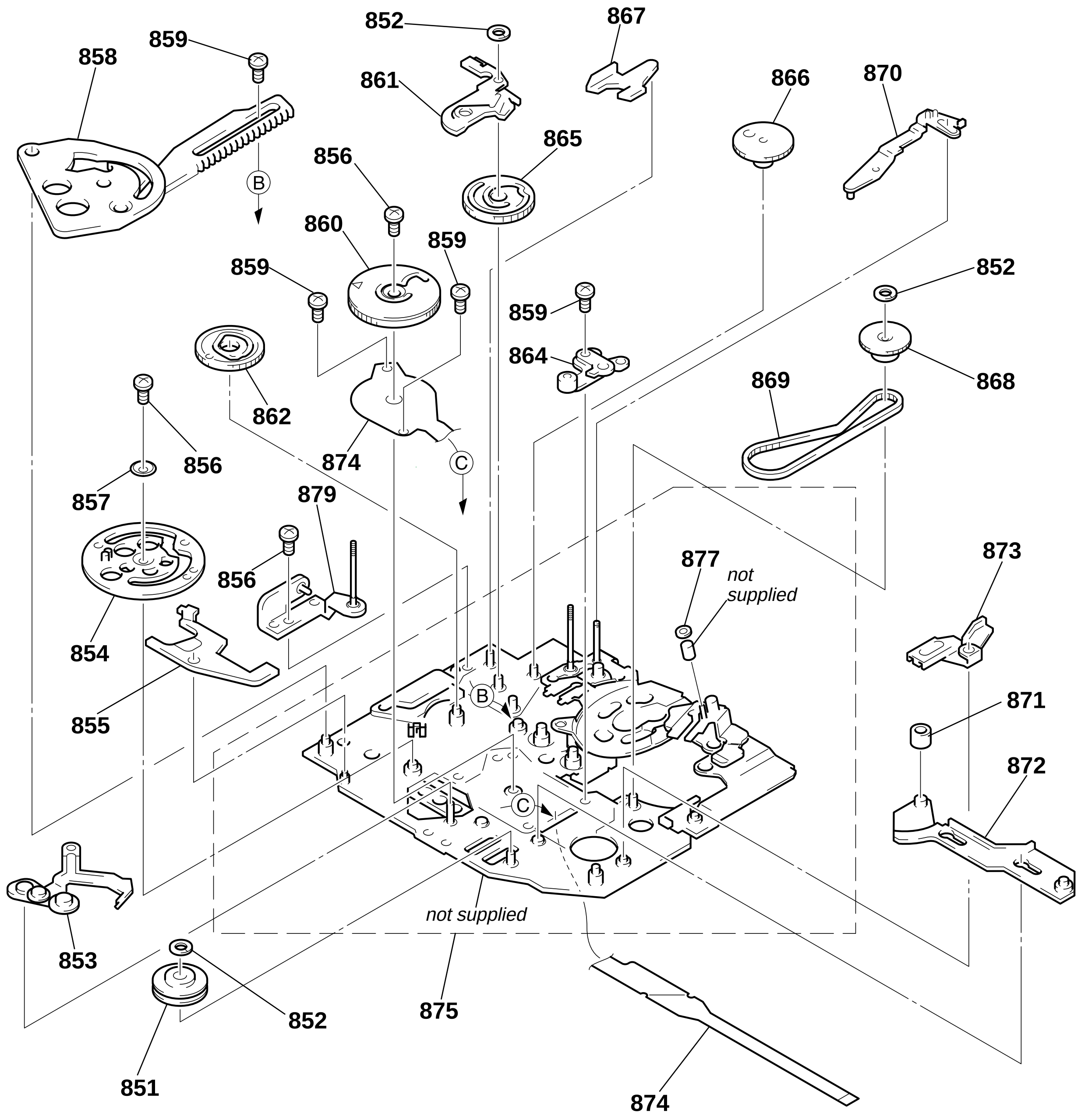
6-1-8. MECHANISM CHASSIS BLOCK SECTION-1

Note: Be sure to remember the installed position (one of two position), direction and thickness of the Ref. No. 820 (spacer, cap) when the M902 (capstan motor)is removed. Refer to “3-9. Capstan motor” on page 15 in the “DV MECHANICAL ADJUSTMENT MANUAL Ⅰ” (9-973-815-11) for details.


807
M903
not supplied
804
805
A
A
814
818
813
812
811
810
809
831
832
826
833
806
813
803
802
801
814
818
815
816
817
808
809
801
not supplied
801
not supplied
not supplied
819
830
827
828
829
813
822
821
823
801
Note
820
M902
not supplied
834

Ref. No.	Part No.	Description	Remarks
801	3-315-414-31	WASHER	
802	X-3748-623-1	GL(S) ASSY	
803	3-748-600-02	RAIL (S)	
804	3-703-816-71	SCREW (M1.4X3.0), SPECIAL HEAD	
805	X-3748-622-2	COASTER (S) ASSY	
806	X-3748-633-1	SHAFT ASSY, WORM	
807	1-666-102-11	FP-586 FLEXIBLE BOARD	
808	3-748-742-02	SPRING, TORSION	
809	3-966-107-01	SPRING, COMPRESSION	
810	3-966-105-01	FLANGE, TG1 LOWER	
811	3-050-519-01	SLEEVE, TG13	
812	3-057-953-01	ROLLER,TG1	
813	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
814	3-966-101-01	NUT, TG13	
815	3-966-099-11	ROLLER, TG13	
816	3-050-519-11	SLEEVE, TG13	
817	3-966-106-01	FLANGE, TG3 LOWER	
818	3-973-948-01	FLANGE (2), TG13 UPPER	
819	3-054-065-01	BOLT (M1.4)	
820	3-967-913-01	SPACER,CAP(t=0.1mm)(Note)	
821	X-3748-624-1	GL(T) ASSY	
822	3-748-601-02	RAIL (T)	
823	3-964-430-01	SPRING, LS RETAINER	
826	3-947-504-01	SCREW (M1.2X2), SPECIAL, 0	
827	X-3748-626-3	TG5 ASSY	
828	3-965-211-01	SCREW (M1)	
829	X-3948-052-3	COASTER (T) ASSY	
830	A-7026-002-A	GL(T) BLOCK ASSY	
* 831	3-976-463-01	HOLDER (DIA. 8), MOTOR	
* 832	3-964-429-01	COVER, WHEEL	
* 833	3-976-464-01	HOLDER (DIA. 8), SHAFT	
834	3-728-103-11	SCREW (M1.4X1.6)	
M902	8-835-524-04	MOTOR, DC SCD-0101A (CAPSTAN)	
M903	A-7010-673-A	ASSY, LM MOTOR	

6-1-9. MECHANISM CHASSIS BLOCK SECTION-2


852
867
859
858
861
866
870
865
B
856
860
859
859
852
859
864
869
868
862
874
856
C
857
879
877
not supplied
873
856
854
B
871
855
872
C
not supplied
853
852
875
851
874

Ref. No.	Part No.	Description	Remarks
851	X-3945-640-1	PULLEY ASSY, RELAY	
852	3-315-414-31	WASHER	
853	X-3748-600-1	ARM ASSY, COMPULSION	
854	X-3748-605-1	CAM(S) ASSY	
855	3-976-452-01	LEVER, EJECT	
856	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
857	3-976-460-01	SPACER, CAM (S)	
858	X-3748-602-2	ARM ASSY, LS	
859	3-728-103-11	SCREW (M1.4X1.6)	
860	X-3748-604-1	CAM ASSY, MODE	
861	3-748-739-02	RETAINER, GEAR	
862	3-748-740-03	GEAR, NO.3	
864	X-3748-627-1	ARM ASSY, ADJUSTMENT	
865	3-748-738-02	GEAR, NO.2	
866	3-748-741-03	GEAR, NO.1	
867	3-748-731-02	ARM, POSITION	
868	X-3945-639-1	PULLEY ASSY, CONVERSION	
869	3-748-734-01	BELT, RELAY	
870	3-974-501-01	ARM(2), RVS STOPPER	
871	3-728-109-01	ROLLER, LS	
872	3-748-647-01	SLIDER, MODE	
873	3-748-733-01	ARM, PINCH RELEASE	
874	1-673-244-11	FP-91 FLEXIBLE BOARD	
875	A-7026-023-B	CHASSIS SUB BLOCK ASSY	
877	4-943-288-01	WASHER	
879	X-3748-606-4	BASE ASSY, TG1	

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- COILS
  uH: μH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...
- Abbreviation
  AUS: Australian model
  JE: Tourist model
  CND: Canadian model
  CN: Chinese model
  HK: Hong Kong model
  KR: Korea model
- Model
  100: DCR-PC100
  100E: DCR-PC100E

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
	A-7031-039-A	CCD/CD BLOCK ASSY(SERVICE USE) (100)	
		(Including CCD imager IC101)	
	A-7031-059-A	CCD/CD BLOCK ASSY(SERVICE USE) (100E)	
		(Including CCD imager IC101)	
		CD-234 MOUNT (Not supplied)	
		*************************	
		(Ref.No.;4000 Series)	
		< CAPACITOR >	
C101	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C102	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C103	1-107-819-11	CERAMIC CHIP 0.022uF 10% 16V	
C104	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C107	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C109	1-164-845-11	CERAMIC CHIP 5PF 0.25PF 16V	
C111	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C112	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C113	1-107-826-91	CERAMIC CHIP 0.1uF 10% 16V	
C114	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C115	1-107-826-91	CERAMIC CHIP 0.1uF 10% 16V	
C118	1-107-687-11	TANTAL. CHIP 3.3uF 20% 20V	
C119	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C122	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C123	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C125	1-127-895-91	TANTAL. CHIP 22uF 20% 4V	
C126	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C127	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V	
C128	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C129	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C130	1-119-749-11	TANTAL. CHIP 33uF 20% 4V	
C131	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C132	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C136	1-107-687-11	TANTAL. CHIP 3.3uF 20% 20V	
C137	1-113-987-11	TANTAL. CHIP 4.7uF 20% 25V	
C139	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V	
C171	1-117-919-11	TANTAL. CHIP 10uF 20% 6.3V	
C172	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V	
		< CONNECTOR >	
CN101	1-785-968-21	CONNECTOR, BOARD TO BOARD 60P	
CN171	1-793-208-21	CONNECTOR, FFC/FPC (ZIF) 33P	
		< DIODE >	
D101	8-713-103-84	DIODE 1T379-01-T8A	
D171	8-719-062-16	DIODE 01ZA8.2(TPL3)	

The CCD imager cannot be replaced as an independent part.
Replace the entire CD-234 board (including the CCD imager).

Ref. No.	Part No.	Description	Remarks
		< FERRITE BEAD >	
FB101	1-414-445-11	FERRITE 0UH	
FB102	1-414-445-11	FERRITE 0UH	
FB103	1-414-445-11	FERRITE 0UH	
FB104	1-414-445-11	FERRITE 0UH	
FB105	1-414-445-11	FERRITE 0UH	
FB106	1-414-445-11	FERRITE 0UH	
		< IC >	
IC102	8-752-400-37	IC CXD2477R-T4	
IC103	8-759-075-66	IC TA75S01F(TE85R)	
IC104	8-759-638-68	IC AD80017JRURL	
		< COIL >	
L101	1-469-528-91	INDUCTOR 100uH	
L103	1-414-771-91	INDUCTOR CHIP 10uH	
L104	1-414-771-91	INDUCTOR CHIP 10uH	
L105	1-414-771-91	INDUCTOR CHIP 10uH	
L171	1-414-771-91	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q101	8-729-037-74	TRANSISTOR UN9213J-(TX).SO	
Q102	8-729-041-23	TRANSISTOR NDS356AP	
Q103	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q104	8-729-050-22	TRANSISTOR 2SC4250(T5LSONY1)	
		< RESISTOR >	
R101	1-218-990-11	SHORT 0	
R102	1-218-990-11	SHORT 0	
R103	1-218-990-11	SHORT 0	
R104	1-218-981-11	RES,CHIP 220K 5%	1/16W
R105	1-218-989-11	RES,CHIP 1M 5%	1/16W
R110	1-218-962-11	RES,CHIP 5.6K 5%	1/16W
R112	1-218-985-11	RES,CHIP 470K 5%	1/16W
R113	1-218-967-11	RES,CHIP 15K 5%	1/16W
R115	1-218-990-11	SHORT 0	
R116	1-218-965-11	RES,CHIP 10K 5%	1/16W
R117	1-218-990-11	SHORT 0	
R120	1-218-935-11	RES,CHIP 33 5%	1/16W
R125	1-218-990-11	SHORT 0	
R129	1-218-990-11	SHORT 0	
R130	1-218-961-11	RES,CHIP 4.7K 5%	1/16W
R131	1-218-990-11	SHORT 0	(100)
R131	1-218-943-11	RES,CHIP 150 5%	1/16W (100E)

Ref. No.	Part No.	Description			Remarks
		< VIBRATOR >			
X101	1-781-632-21	VIBRATOR, CRYSTAL (66MHz) (100)			
X101	1-781-633-21	VIBRATOR, CRYSTAL (54MHz) (100E)			
	A-7074-106-A	FJ-25 BOARD, COMPLETE			
		**********************			
					(Ref.No.;4000 Series)
		< CAPACITOR >			
C910	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C912	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C913	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C914	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C915	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C916	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C918	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C919	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C920	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
		< CONNECTOR >			
CN900	1-778-592-21	CONNECTOR, BOARD TO BOARD 50P			
* CN910	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
* CN911	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
		< DIODE >			
D910	8-719-056-89	DIODE	MA8120-TX		
D911	8-719-073-03	DIODE	MA8082-(K8).S0		
D912	8-719-073-03	DIODE	MA8082-(K8).S0		
D913	8-719-056-48	DIODE	1SS388(TPL3)		
D914	8-719-056-23	DIODE	MA2S111-(K8).SO		
D915	8-719-056-89	DIODE	MA8120-TX		
D916	8-719-056-89	DIODE	MA8120-TX		
D917	8-719-056-23	DIODE	MA2S111-(K8).SO		
D950	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D951	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D952	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D953	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D954	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D955	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D990	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D991	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D992	8-719-056-61	DIODE	015AZ8.2-TPL3		
		< FUSE >			
⚠F910	1-576-286-21	FUSE, MICRO	(1.4A 24V)		
⚠F911	1-576-286-21	FUSE, MICRO	(1.4A 24V)		
⚠F912	1-576-286-21	FUSE, MICRO	(1.4A 24V)		
⚠F913	1-576-286-21	FUSE, MICRO	(1.4A 24V)		
⚠F914	1-576-286-21	FUSE, MICRO	(1.4A 24V)		
⚠F915	1-576-286-21	FUSE, MICRO	(1.4A 24V)		
		< FERRITE BEAD >			
FB950	1-500-444-11	FERRITE	0UH		
FB951	1-500-444-11	FERRITE	0UH		
FB952	1-500-444-11	FERRITE	0UH		
FB953	1-500-444-11	FERRITE	0UH		
FB954	1-500-444-11	FERRITE	0UH		
FB955	1-500-444-11	FERRITE	0UH		
FB956	1-500-444-11	FERRITE	0UH		
FB957	1-500-444-11	FERRITE	0UH		
FB990	1-500-444-11	FERRITE	0UH		
FB992	1-500-444-11	FERRITE	0UH		
		< JACK >			
J950	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO)			
J951	1-569-950-21	JACK (🎧 HEADHONES)			
J952	1-565-276-31	JACK, ULTRA SMALL 1P (◐ LANC)			
J990	1-778-518-11	CONNECTOR, EXTERNAL (S VIDEO)			
		< LINE FILTER >			
LF910	1-411-957-11	FILTER, COMMON MODE			
		< TRANSISTOR >			
Q910	8-729-047-68	TRANSISTOR	2SK1830-TE85L		
⚠Q911	8-729-046-77	TRANSISTOR	SI4963DY-T1		
Q912	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q913	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q914	8-729-017-61	TRANSISTOR	2SB1581-T1		
Q915	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO		
Q916	8-729-427-72	TRANSISTOR	XP4501-TXE		
Q917	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q918	8-729-042-56	TRANSISTOR	MGSF3455VT1		
		< RESISTOR >			
R910	1-218-953-11	RES,CHIP	1K	5%	1/16W
R911	1-218-985-11	RES,CHIP	470K	5%	1/16W
R912	1-218-989-11	RES,CHIP	1M	5%	1/16W
R913	1-216-150-91	RES,CHIP	10	5%	1/8W
R914	1-218-953-11	RES,CHIP	1K	5%	1/16W
R915	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R916	1-218-973-11	RES,CHIP	47K	5%	1/16W
R917	1-218-965-11	RES,CHIP	10K	5%	1/16W
R918	1-218-989-11	RES,CHIP	1M	5%	1/16W
R919	1-218-965-11	RES,CHIP	10K	5%	1/16W
R920	1-208-719-11	METAL CHIP	33K	0.50%	1/16W
R921	1-218-974-11	METAL CHIP	56K	0.50%	1/16W
R922	1-218-990-11	SHORT	0		
R923	1-216-864-11	METAL CHIP	0	5%	1/16W
R924	1-218-849-11	METAL CHIP	1.2K	0.50%	1/16W
R925	1-218-953-11	RES,CHIP	1K	5%	1/16W
R950	1-216-864-11	METAL CHIP	0	5%	1/16W
R951	1-216-864-11	METAL CHIP	0	5%	1/16W
R952	1-216-864-11	METAL CHIP	0	5%	1/16W
R953	1-216-864-11	METAL CHIP	0	5%	1/16W
R954	1-218-964-11	RES,CHIP	8.2K	5%	1/16W
R990	1-216-864-11	METAL CHIP	0	5%	1/16W
R991	1-216-864-11	METAL CHIP	0	5%	1/16W
R992	1-216-864-11	METAL CHIP	0	5%	1/16W

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
		FP-92 MOUNT (Not supplied) ************************	
			(Ref.No.;4000 Series)
	3-338-687-41	SCREW (1.4), +P TAPPING (B)	
	3-976-446-01	DAMPER	
		< CONNECTOR >	
CN901	1-770-312-11	CONNECTOR 4P (MIC)	
		< TRANSISTOR >	
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)	
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)	
		< SWITCH >	
S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)	
S903	1-572-467-21	SWITCH, PUSH (1 KEY)(CC DOWN)	
		FP-242 (D3) COMPLETE (Not supplied) *********************************	
			(Ref.No.;4000 Series)
	3-054-790-01	HOLDER, FPC	
	3-976-458-01	HOLDER (T), SENSOR	
	3-976-644-01	SENSOR, HOLDER, S	
		< DIODE >	
D901	8-719-050-98	DIODE LN57.SO (TAPE LED)	
		< HOLE ELEMENT >	
H001	8-719-033-37	ELEMENT, HALL HW-105C (S REEL SENSOR)	
H002	8-719-071-98	ELEMENT, HALL HW-105C-FT-V-R	(T REEL SENSOR)
		< RESISTOR >	
R901	1-216-807-11	METAL CHIP 68 5%	1/16W
R902	1-216-807-11	METAL CHIP 68 5%	1/16W
R903	1-216-807-11	METAL CHIP 68 5%	1/16W
R904	1-216-807-11	METAL CHIP 68 5%	1/16W
	1-666-102-11	FP-586 FLEXIBLE BOARD ********************	
	A-7074-105-A	MA-367 BOARD, COMPLETE ************************	
			(Ref.No.;10000 Series)
		< CAPACITOR >	
C450	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C451	1-117-919-11	TANTAL. CHIP 10uF 20%	6.3V
C7304	1-117-863-11	CERAMIC CHIP 0.47uF 10%	6.3V
C7305	1-164-943-11	CERAMIC CHIP 0.01uF 10%	16V
C7306	1-164-874-11	CERAMIC CHIP 100PF 5%	16V
C7307	1-164-874-11	CERAMIC CHIP 100PF 5%	16V
C7308	1-117-919-11	TANTAL. CHIP 10uF 20%	6.3V
C7309	1-117-919-11	TANTAL. CHIP 10uF 20%	6.3V
C7310	1-107-819-11	CERAMIC CHIP 0.022uF 10%	16V
C7311	1-117-863-11	CERAMIC CHIP 0.47uF 10%	6.3V
C7313	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C7314	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C7315	1-164-937-11	CERAMIC CHIP 0.001uF 10%	16V
C7316	1-164-937-11	CERAMIC CHIP 0.001uF 10%	16V
C7318	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7319	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7320	1-164-874-11	CERAMIC CHIP 100PF 5%	16V
C7321	1-164-874-11	CERAMIC CHIP 100PF 5%	16V
C7324	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7325	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7328	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C7331	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C7334	1-164-937-11	CERAMIC CHIP 0.001uF 10%	16V
C7335	1-164-937-11	CERAMIC CHIP 0.001uF 10%	16V
C7338	1-107-819-11	CERAMIC CHIP 0.022uF 10%	16V
C7339	1-107-819-11	CERAMIC CHIP 0.022uF 10%	16V
C7340	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
C7341	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
C7342	1-164-935-11	CERAMIC CHIP 470PF 10%	16V
C7343	1-164-935-11	CERAMIC CHIP 470PF 10%	16V
C7345	1-115-156-11	CERAMIC CHIP 1uF	10V
C7346	1-115-156-11	CERAMIC CHIP 1uF	10V
C7347	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C7350	1-127-895-91	TANTAL. CHIP 22uF 20%	4V
C7351	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7352	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7353	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
C7354	1-107-826-91	CERAMIC CHIP 0.1uF 10%	16V
		< CONNECTOR >	
CN7300	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P	
CN7305	1-778-590-21	CONNECTOR, BOARD TO BOARD 20P	
CN7306	1-691-373-21	CONNECTOR, FFC/FPC 9P	
		< DIODE >	
D7306	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D7307	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D7308	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D7309	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D7310	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D7311	8-719-062-16	DIODE 01ZA8.2(TPL3)	
		< FERRITE BEAD >	
FB7301	1-500-444-11	FERRITE 0UH	
FB7302	1-500-444-11	FERRITE 0UH	
FB7303	1-500-444-11	FERRITE 0UH	
		< IC >	
IC7301	8-759-646-03	IC AN2901FH-EB	
		< JACK >	
J7301	1-793-703-11	JACK (DIA. 3.5)	
		< COIL >	
L450	1-414-754-11	INDUCTOR 10uH	
L7301	1-414-771-91	INDUCTOR CHIP 10uH	

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R7303	1-218-990-11	SHORT	0		
R7309	1-218-967-11	RES,CHIP	15K	5%	1/16W
R7310	1-218-967-11	RES,CHIP	15K	5%	1/16W
R7311	1-218-968-11	RES,CHIP	18K	5%	1/16W
R7312	1-218-971-11	RES,CHIP	33K	5%	1/16W
R7313	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R7314	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R7315	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R7316	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R7317	1-218-953-11	RES,CHIP	1K	5%	1/16W
R7318	1-218-953-11	RES,CHIP	1K	5%	1/16W
R7321	1-218-965-11	RES,CHIP	10K	5%	1/16W
R7327	1-218-965-11	RES,CHIP	10K	5%	1/16W
R7328	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R7332	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R7342	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R7344	1-218-971-11	RES,CHIP	33K	5%	1/16W
R7345	1-218-966-11	RES,CHIP	12K	5%	1/16W
R7347	1-218-971-11	RES,CHIP	33K	5%	1/16W
R7348	1-218-950-11	RES,CHIP	560	5%	1/16W
R7349	1-218-872-11	METAL CHIP	11K	0.50%	1/16W
R7350	1-218-872-11	METAL CHIP	11K	0.50%	1/16W
R7351	1-218-865-11	METAL CHIP	5.6K	0.50%	1/16W
		< SENSOR >			
SE450	1-418-682-21	SENSOR, ANGULAR VELOCITY (YAW)			
SE451	1-418-682-41	SENSOR, ANGULAR VELOCITY (PITCH)			

Ref. No.	Part No.	Description			Remarks
	A-7074-103-A	MR-44 BOARD, COMPLETE ***********************			
					(Ref.No.;10000 Series)
*	3-052-742-02	HOLDER, LED			
		< CAPACITOR >			
C1804	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1833	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1834	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1837	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1838	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1840	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1844	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1845	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1846	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1847	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1850	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C1852	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C1854	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C1856	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1860	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1869	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1875	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1878	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1881	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1884	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1885	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1886	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1887	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1888	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1889	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1890	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1891	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1901	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1903	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C1904	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1909	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1910	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1914	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1915	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C1933	1-127-578-91	TANTAL. CHIP	3.3uF	20%	6.3V
C2301	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2500	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C2507	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2546	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2550	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C2551	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2552	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2553	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2554	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C2555	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2556	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2557	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2558	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2559	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2561	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C2562	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2563	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2564	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2565	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C2566	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2567	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C2569	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2570	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C2572	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2573	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C2574	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C2575	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2576	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2577	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C2579	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2582	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2583	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C2585	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2586	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2587	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2588	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2589	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2590	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C2591	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C7500	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

MR-44

Ref. No.	Part No.	Description			Remarks
C7501	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7502	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C7503	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7504	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C7505	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7506	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7507	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C7508	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C7509	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C7510	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7511	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C7512	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7513	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C7514	1-164-668-11	CERAMIC CHIP	510PF	5%	50V
C7515	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7516	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C7517	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C7518	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7519	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C7520	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7521	1-164-844-11	CERAMIC CHIP	4PF	0.25PF	16V
C7522	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C7523	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7524	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7525	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C7526	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7527	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7528	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C7529	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7530	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7531	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C7532	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7533	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C7534	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V

< CONNECTOR >

Ref. No.	Part No.	Description
CN1810	1-750-350-21	CONNECTOR, FFC/FPC (ZIF) 10P
CN2301	1-785-969-21	CONNECTOR, BOARD TO BOARD 100P
CN2302	1-784-424-21	CONNECTOR, FFC/FPC (ZIF) 51P
CN2303	1-691-483-21	CONNECTOR, FFC/FPC 4P
CN2304	1-691-344-11	CONNECTOR, FFC/FPC (ZIF) 6P

< DIODE >

Ref. No.	Part No.	Description	
D2301	8-719-056-23	DIODE	MA2S111-(K8).SO
D2302	8-719-070-91	DIODE	TLSU1008(T05,SOY)
D7501	8-719-061-86	DIODE	DCR2810
D7502	8-719-067-44	DIODE	CL-310IRS-X-TU

< FERRITE BEAD >

Ref. No.	Part No.	Description	
FB1801	1-414-760-21	FERRITE	0UH
FB1802	1-414-760-21	FERRITE	0UH
FB1901	1-414-760-21	FERRITE	0UH
FB1902	1-414-760-21	FERRITE	0UH

< IC >

Ref. No.	Part No.	Description	
IC1814	8-752-086-52	IC	CXA2071R-T4
IC1816	8-752-086-53	IC	CXA2072R-T4
IC1900	8-759-584-35	IC	F712504DPM-TEB
IC2301	8-749-013-13	IC	RS-70-TU
IC2503	8-759-431-30	IC	CXA8062R-EB
IC2504	8-759-385-94	IC	CXA8053Q-TE-B
IC2505	8-759-434-46	IC	TA8486F(EL)
IC7500	8-759-430-57	IC	M62367GP-75ED
IC7501	8-759-498-52	IC	LA9511W-TBM

< COIL >

Ref. No.	Part No.	Description	
L1803	1-414-771-91	INDUCTOR CHIP	10uH
L1808	1-414-771-91	INDUCTOR CHIP	10uH
L1811	1-414-771-91	INDUCTOR CHIP	10uH
L2301	1-414-770-91	INDUCTOR CHIP	4.7uH
L2511	1-414-771-91	INDUCTOR CHIP	10uH
L2512	1-414-771-91	INDUCTOR CHIP	10uH
L7500	1-414-771-91	INDUCTOR CHIP	10uH
L7501	1-469-098-91	INDUCTOR	33uH
L7502	1-469-098-91	INDUCTOR	33uH
L7503	1-412-948-11	INDUCTOR	5.6uH
L7504	1-469-526-91	INDUCTOR	22uH

< TRANSISTOR >

Ref. No.	Part No.	Description	
Q1810	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO
Q2301	8-729-037-72	TRANSISTOR	UN9211J-(K8).SO
Q2302	8-729-427-70	TRANSISTOR	XP4401-TXE
Q2303	8-729-037-61	TRANSISTOR	UN9113J-(K8).SO
Q2304	8-729-141-48	TRANSISTOR	2SB624-T1BV4
Q2505	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO
Q2506	8-729-141-48	TRANSISTOR	2SB624-T1BV4
Q2507	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO
Q7500	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO
Q7501	8-729-122-63	TRANSISTOR	2SA1226-T1E3E4
Q7502	8-729-141-48	TRANSISTOR	2SB624-T1BV4
Q7503	8-729-037-53	TRANSISTOR	2SB1462J-QR(TX).SO
Q7504	8-729-140-75	TRANSISTOR	2SD999-T1-CLCK
Q7505	8-729-037-72	TRANSISTOR	UN9211J-(TX).SO

< RESISTOR >

Ref. No.	Part No.	Description			Remarks
R1826	1-218-979-11	RES,CHIP	150K	5%	1/16W
R1828	1-218-949-11	RES,CHIP	470	5%	1/16W
R1834	1-218-969-11	RES,CHIP	22K	5%	1/16W
R1836	1-208-910-11	RES,CHIP	9.1K	5%	1/16W
R1837	1-208-910-11	RES,CHIP	9.1K	5%	1/16W
R1838	1-218-969-11	RES,CHIP	22K	5%	1/16W
R1843	1-218-945-11	METAL CHIP	220	0.50%	1/16W
R1848	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1852	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1855	1-218-945-11	METAL CHIP	220	0.50%	1/16W
R1857	1-218-945-11	METAL CHIP	220	0.50%	1/16W
R1859	1-218-945-11	METAL CHIP	220	0.50%	1/16W
R1869	1-218-966-11	RES,CHIP	12K	5%	1/16W
R1870	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1871	1-218-939-11	RES,CHIP	68	5%	1/16W
R1872	1-218-990-11	SHORT	0		
R1874	1-218-989-11	RES,CHIP	1M	5%	1/16W
R1875	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1876	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R1879	1-218-966-11	RES,CHIP	12K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R1909	1-218-931-11	RES,CHIP	15	5%	1/16W
R1938	1-218-977-11	RES,CHIP	100K	5%	1/16W
R1939	1-218-990-11	SHORT	0		
R1940	1-218-990-11	SHORT	0		
R1941	1-218-990-11	SHORT	0		
R2305	1-218-937-11	RES,CHIP	47	5%	1/16W
R2306	1-218-962-11	RES,CHIP	5.6K	5%	1/16W
R2307	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2308	1-218-951-11	RES,CHIP	680	5%	1/16W
R2309	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R2310	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R2311	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R2312	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2313	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2314	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2505	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2506	1-208-707-11	METAL CHIP	10K	0.50%	1/16W
R2507	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2508	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2510	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2511	1-208-935-11	METAL CHIP	100K	0.50%	1/16W
R2517	1-218-989-11	RES,CHIP	1M	5%	1/16W
R2530	1-218-971-11	RES,CHIP	33K	5%	1/16W
R2531	1-217-671-11	METAL CHIP	1	5%	1/10W
R2532	1-217-671-11	METAL CHIP	1	5%	1/10W
R2533	1-217-671-11	METAL CHIP	1	5%	1/10W
R2534	1-218-940-11	RES,CHIP	82	5%	1/16W
R2546	1-218-979-11	RES,CHIP	150K	5%	1/16W
R2547	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2549	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2550	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2551	1-208-675-11	METAL CHIP	470	0.50%	1/16W
R2552	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2553	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2554	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2556	1-218-978-11	RES,CHIP	120K	5%	1/16W
R2557	1-218-986-11	RES,CHIP	560K	5%	1/16W
R2558	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2559	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2560	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2564	1-217-671-11	METAL CHIP	1	5%	1/10W
R2565	1-217-671-11	METAL CHIP	1	5%	1/10W
R2566	1-218-941-11	RES,CHIP	100	5%	1/16W
R2567	1-218-941-11	RES,CHIP	100	5%	1/16W
R2568	1-218-941-11	RES,CHIP	100	5%	1/16W
R2569	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2570	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2571	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2572	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2573	1-218-949-11	RES,CHIP	470	5%	1/16W
R2574	1-217-671-11	METAL CHIP	1	5%	1/10W
R2575	1-217-671-11	METAL CHIP	1	5%	1/10W
R2576	1-217-671-11	METAL CHIP	1	5%	1/10W
R2577	1-217-671-11	METAL CHIP	1	5%	1/10W
R2578	1-218-973-11	RES,CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R2579	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2582	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R2583	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2585	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2586	1-218-941-11	RES,CHIP	100	5%	1/16W
R2587	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2599	1-217-671-11	METAL CHIP	1	5%	1/10W
R7500	1-218-973-11	RES,CHIP	47K	5%	1/16W
R7501	1-218-973-11	RES,CHIP	47K	5%	1/16W
R7502	1-218-968-11	RES,CHIP	18K	5%	1/16W
R7503	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R7504	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R7505	1-218-965-11	RES,CHIP	10K	5%	1/16W
R7506	1-218-967-11	RES,CHIP	15K	5%	1/16W
R7507	1-218-965-11	RES,CHIP	10K	5%	1/16W
R7509	1-218-989-11	RES,CHIP	1M	5%	1/16W
R7510	1-208-715-11	METAL CHIP	22K	0.50%	1/16W
R7511	1-218-947-11	RES,CHIP	330	5%	1/16W
R7512	1-218-953-11	RES,CHIP	1K	5%	1/16W
R7514	1-218-949-11	RES,CHIP	470	5%	1/16W
R7516	1-218-979-11	RES,CHIP	150K	5%	1/16W
R7517	1-218-979-11	RES,CHIP	150K	5%	1/16W
R7518	1-218-950-11	RES,CHIP	560	5%	1/16W
R7519	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R7520	1-218-949-11	RES,CHIP	470	5%	1/16W
R7521	1-218-971-11	RES,CHIP	33K	5%	1/16W
R7522	1-218-947-11	RES,CHIP	330	5%	1/16W
R7523	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R7524	1-218-949-11	RES,CHIP	470	5%	1/16W
R7525	1-218-935-11	RES,CHIP	33	5%	1/16W
R7526	1-216-795-11	RES,CHIP	6.8	5%	1/16W
R7527	1-218-973-11	RES,CHIP	47K	5%	1/16W
R7528	1-218-953-11	RES,CHIP	1K	5%	1/16W
R7529	1-218-932-11	RES,CHIP	18	5%	1/16W
R7530	1-216-001-00	METAL CHIP	10	5%	1/10W
R7531	1-218-941-11	RES,CHIP	100	5%	1/16W

A-7074-107-A PD-125 BOARD, COMPLETE

****

(Ref.No.;10000 Series)

< CAPACITOR >

C8008	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C8009	1-131-862-91	TANTAL. CHIP	47uF	20%	4V
C8010	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8011	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8012	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8014	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8016	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8017	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8018	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C8019	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8020	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8021	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8022	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C8023	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C8024	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C8025	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C8026	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8028	1-113-988-11	TANTAL. CHIP	68uF	20%	4V
C8100	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8101	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8102	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8103	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8104	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8200	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8201	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C8202	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8203	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8204	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8205	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C8206	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C8207	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8208	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8209	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8211	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C8212	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8213	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C8214	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
		< CONNECTOR >			
CN8001	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
CN8002	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P			
* CN8200	1-778-172-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN8201	1-764-704-21	CONNECTOR, FFC/FPC (LIF) 5P			
		< DIODE >			
D8100	8-719-059-47	DIODE PG1111R-TR			
D8200	8-713-102-80	DIODE 1T369-01-T8A			
D8202	8-719-050-39	DIODE RD2.7UM-T1B			
		< IC >			
IC8001	8-759-524-98	IC CXA8116R-T4			
IC8200	8-759-364-05	IC M62376GP-65AD			
IC8200	8-759-364-05	IC MB40D001PFV-G-BND-ER			
IC8201	8-752-401-19	IC CXD2471AR-T4			
IC8202	8-759-580-26	IC NJM2130F(TE2)			
		< COIL >			
L8001	1-469-525-91	INDUCTOR	10uH		
L8002	1-469-525-91	INDUCTOR	10uH		
L8100	1-414-396-41	INDUCTOR	4.7uH		
L8101	1-469-528-91	INDUCTOR	100uH		
L8200	1-469-525-91	INDUCTOR	10uH		
L8201	1-412-945-11	INDUCTOR	3.3uH		
L8202	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q8000	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q8001	8-729-427-16	TRANSISTOR	XP4113-TXE		
Q8003	8-729-041-23	TRANSISTOR	NDS356AP		
Q8007	8-729-046-75	TRANSISTOR	SI2301DS-T1		
Q8009	8-729-427-74	TRANSISTOR	XP4601-TXE		

Ref. No.	Part No.	Description			Remarks
Q8010	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q8011	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q8100	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO		
Q8101	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO		
Q8102	8-729-042-72	TRANSISTOR	UN9214J-(K8).SO		
Q8204	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO		
		< RESISTOR >			
R8000	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8003	1-218-989-11	RES,CHIP	1M	5%	1/16W
R8004	1-218-990-11	SHORT	0		
R8005	1-218-990-11	SHORT	0		
R8006	1-218-990-11	SHORT	0		
R8012	1-218-989-11	RES,CHIP	1M	5%	1/16W
R8014	1-218-968-11	RES,CHIP	18K	5%	1/16W
R8015	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8016	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8017	1-218-971-11	RES,CHIP	33K	5%	1/16W
R8018	1-218-972-11	RES,CHIP	39K	5%	1/16W
R8019	1-218-985-11	RES,CHIP	470K	5%	1/16W
R8020	1-218-969-11	RES,CHIP	22K	5%	1/16W
R8021	1-218-973-11	RES,CHIP	47K	5%	1/16W
R8022	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R8023	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R8024	1-218-969-11	RES,CHIP	22K	5%	1/16W
R8025	1-218-973-11	RES,CHIP	47K	5%	1/16W
R8026	1-218-971-11	RES,CHIP	33K	5%	1/16W
R8027	1-218-972-11	RES,CHIP	39K	5%	1/16W
R8028	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8030	1-218-974-11	RES,CHIP	56K	5%	1/16W
R8031	1-218-941-11	RES,CHIP	100	5%	1/16W
R8032	1-218-941-11	RES,CHIP	100	5%	1/16W
R8033	1-218-941-11	RES,CHIP	100	5%	1/16W
R8034	1-218-970-11	METAL CHIP	27K	0.50%	1/16W
R8035	1-218-982-11	METAL CHIP	270K	0.50%	1/16W
R8036	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R8037	1-218-981-11	RES,CHIP	220K	5%	1/16W
R8038	1-218-969-11	RES,CHIP	22K	5%	1/16W
R8039	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R8040	1-218-971-11	RES,CHIP	33K	5%	1/16W
R8042	1-218-990-11	SHORT	0		
R8043	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8044	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8045	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8047	1-218-990-11	SHORT	0		
R8052	1-218-990-11	SHORT	0		
R8100	1-218-941-11	RES,CHIP	100	5%	1/16W
R8101	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R8102	1-218-953-11	RES,CHIP	1K	5%	1/16W
R8200	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8201	1-218-989-11	RES,CHIP	1M	5%	1/16W
R8202	1-218-968-11	RES,CHIP	18K	5%	1/16W
R8205	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R8206	1-218-971-11	RES,CHIP	33K	5%	1/16W
R8207	1-218-949-11	RES,CHIP	470	5%	1/16W
R8208	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8211	1-216-864-11	METAL CHIP	0	5%	1/16W
R8212	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R8213	1-218-990-11	SHORT	0		
R8214	1-218-990-11	SHORT	0		
R8215	1-218-941-11	RES,CHIP	100	5%	1/16W
R8216	1-218-941-11	RES,CHIP	100	5%	1/16W
R8217	1-218-941-11	RES,CHIP	100	5%	1/16W
R8218	1-218-941-11	RES,CHIP	100	5%	1/16W
R8220	1-218-990-11	SHORT	0		
R8221	1-218-990-11	SHORT	0		
R8222	1-218-990-11	SHORT	0		
R8223	1-218-990-11	SHORT	0		
R8224	1-218-990-11	SHORT	0		
R8225	1-218-990-11	SHORT	0		
R8230	1-218-990-11	SHORT	0		
R8232	1-218-990-11	SHORT	0		
R8233	1-216-864-11	METAL CHIP	0	5%	1/16W
R8234	1-218-990-11	SHORT	0		
R8235	1-216-864-11	METAL CHIP	0	5%	1/16W
R8236	1-218-990-11	SHORT	0		
R8238	1-218-979-11	RES,CHIP	150K	5%	1/16W
R8239	1-218-986-11	RES,CHIP	560K	5%	1/16W
R8240	1-218-971-11	RES,CHIP	33K	5%	1/16W
R8241	1-218-974-11	RES,CHIP	56K	5%	1/16W
R8242	1-218-985-11	RES,CHIP	470K	5%	1/16W
R8243	1-218-985-11	RES,CHIP	470K	5%	1/16W
R8245	1-218-990-11	SHORT	0		
R8246	1-218-990-11	SHORT	0		
R8250	1-218-973-11	RES,CHIP	47K	5%	1/16W

A-7074-108-A VC-227 BOARD, COMPLETE
****
(Ref.No.;10000 Series) (100)

A-7074-198-A VC-227P BOARD, COMPLETE
****
(Ref.No.;10000 Series) (100E)

Parts list of the VC-227 board is not shown.
Pages from 6-18 to 6-25 are not shown.

Ref. No.	Part No.	Description			Remarks
	A-7074-104-A	VF-138 BOARD, COMPLETE **********************			
					(Ref.No.;10000 Series)
		< CAPACITOR >			
C5000	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5001	1-131-862-91	TANTAL. CHIP	47uF	20%	4V
C5002	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5003	1-113-600-11	TANTAL. CHIP	2.2uF	20%	6.3V
C5004	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5005	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5006	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5007	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5009	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C5010	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C5011	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C5013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5014	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C5015	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5017	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C5018	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5019	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5020	1-164-868-11	CERAMIC CHIP	56PF	5%	16V
C5021	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5022	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5023	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5024	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5029	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C5030	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5051	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C5052	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5054	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C5500	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5503	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
		< CONNECTOR >			
CN5001	1-778-590-21	CONNECTOR, BOARD TO BOARD 20P			
CN5501	1-750-333-11	CONNECTOR, FFC/FPC (ZIF) 6P			
CN5502	1-691-380-21	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D5000	8-713-102-80	DIODE 1T369-01-T8A			
		< IC >			
IC5000	8-759-546-65	IC CXA8115AR-T4			
IC5001	8-759-364-05	IC M62376GP-65AD			
IC5001	8-759-364-05	IC MB40D001PFV-G-BND-ER			
IC5002	8-752-392-33	IC CXD2458AR-T4			
IC5003	8-759-580-26	IC NJM2130F(TE2)			

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L5000	1-414-771-91	INDUCTOR CHIP	10uH		
L5001	1-469-058-11	INDUCTOR CHIP	22uH		
L5004	1-469-058-11	INDUCTOR CHIP	22uH		
L5006	1-412-945-11	INDUCTOR	3.3uH		
		< TRANSISTOR >			
Q5002	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q5050	8-729-041-23	TRANSISTOR	NDS356AP		
Q5051	8-729-046-75	TRANSISTOR	SI2301DS-T1		
Q5052	8-729-427-46	TRANSISTOR	XP4213-TXE		
Q5053	8-729-929-32	TRANSISTOR	DTC144TE-TL		
Q5500	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q5501	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q5502	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q5503	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q5504	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q5505	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
		< RESISTOR >			
R5001	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5002	1-218-969-11	RES,CHIP	22K	5%	1/16W
R5005	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5006	1-218-975-11	RES,CHIP	68K	5%	1/16W
R5007	1-218-985-11	RES,CHIP	470K	5%	1/16W
R5010	1-218-990-11	SHORT	0		
R5011	1-218-990-11	SHORT	0		
R5014	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5015	1-218-972-11	RES,CHIP	39K	5%	1/16W
R5016	1-218-941-11	RES,CHIP	100	5%	1/16W
R5017	1-218-941-11	RES,CHIP	100	5%	1/16W
R5018	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5019	1-218-941-11	RES,CHIP	100	5%	1/16W
R5023	1-218-967-11	RES,CHIP	15K	5%	1/16W
R5024	1-218-967-11	RES,CHIP	15K	5%	1/16W
R5025	1-218-989-11	RES,CHIP	1M	5%	1/16W
R5026	1-218-977-11	RES,CHIP	100K	5%	1/16W
R5027	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5028	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5029	1-218-990-11	SHORT	0		
R5030	1-218-953-11	RES,CHIP	1K	5%	1/16W
R5032	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5037	1-218-990-11	SHORT	0		
R5040	1-218-985-11	RES,CHIP	470K	5%	1/16W
R5041	1-218-985-11	RES,CHIP	470K	5%	1/16W
R5042	1-218-990-11	SHORT	0		
R5050	1-218-987-11	RES,CHIP	680K	5%	1/16W
R5051	1-218-989-11	RES,CHIP	1M	5%	1/16W
R5052	1-218-989-11	RES,CHIP	1M	5%	1/16W
R5053	1-218-986-11	RES,CHIP	560K	5%	1/16W
R5054	1-218-977-11	RES,CHIP	100K	5%	1/16W
R5055	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5500	1-218-964-11	RES,CHIP	8.2K	5%	1/16W
R5501	1-218-964-11	RES,CHIP	8.2K	5%	1/16W
R5502	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5503	1-218-964-11	RES,CHIP	8.2K	5%	1/16W
R5504	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R5505	1-218-962-11	RES,CHIP	5.6K	5%	1/16W
R5506	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R5507	1-218-937-11	RES,CHIP	47	5%	1/16W
R5508	1-218-937-11	RES,CHIP	47	5%	1/16W
R5509	1-218-937-11	RES,CHIP	47	5%	1/16W
R5510	1-218-937-11	RES,CHIP	47	5%	1/16W
R5511	1-218-990-11	SHORT	0		
		< THERMISTOR >			
TH5500	1-810-812-21	THERMISTOR, NTC (1608)			

MISCELLANEOUS
****

Ref. No.	Part No.	Description
12	1-475-950-21	REMOTE COMMANDER(RMT-811)
54	1-785-593-21	CONNECTOR, MEMORY STICK
55	1-675-715-21	FP-128 FLEXIBLE BOARD
62	1-675-717-11	FP-130 FLEXIBLE BOARD
63	1-785-594-11	CONNECTOR (HOT SHOE), OUTER
⚠107	1-418-517-11	TRANSFORMER UNIT, INVERTER
121	1-959-987-11	HARNESS (PT-126) 13PIN
122	1-959-986-11	HARNESS (PT-125) 4PIN
125	1-675-716-21	FP-129 FLEXIBLE BOARD
128	1-694-493-21	TERMINAL BOARD, BATTERY
130	1-785-247-31	CONNECTOR, DC-IN
131	1-418-681-21	SWITCH BLOCK, CONTROL(ME-4950)
167	1-528-724-21	BATTERY, V/L RECHARGEABLE
168	1-418-680-21	SWITCH BLOCK, CONTROL(FK-4950)
201	8-848-734-01	DEVICE, LENS LSV-660A
206	1-758-353-11	FILTER BLOCK, OPTICAL
807	1-666-102-11	FP-586 FLEXIBLE BOARD
874	1-673-244-11	FP-91 FLEXIBLE BOARD
CN901	1-770-312-11	CONNECTOR 4P (MIC)
D901	8-719-050-98	DIODE LN57.SO (TAPE LED)
H001	8-719-033-37	ELEMENT, HALL HW-105C (S REEL SENSOR)
H002	8-719-071-98	ELEMENT, HALL HW-105C-FT-V-R (T REEL SENSOR)
LCD901	8-753-050-13	ACX300AK-J
LCD902	8-753-023-51	LCX027AK-J
LED902	1-475-980-11	BLOCK, LIGHT GUIDE PLATE
M901	A-7048-901-A	DRUM BLOCK ASSY(DEH-07F-R)
M902	8-835-524-04	MOTOR, DC SCD-0101A (CAPSTAN)
M903	A-7010-673-A	ASSY, LM MOTOR
MIC901	1-475-975-21	MICROPHONE UNIT
⚠ND901	1-517-877-21	TUBE, FLUORESCENT,COLD CATHODE
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)
S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)
S903	1-572-467-21	SWITCH, PUSH (1 KEY)(CC DOWN)
SP901	1-529-547-11	SPEAKER (2.0 CM)

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS ********************************	
⚠FigC	1-418-420-12	ADAPTOR, AC (AC-PW1) (100:JE,KR,HK,E/100E:E,HK,JE,AUS,CN)	
⚠FigC	1-467-510-42	ADAPTOR, AC (AC-PT1) (100:US,CND)	
⚠FigC	1-467-511-72	ADAPTOR, AC (AC-PT1) (100E:AEP)	
⚠FigC	1-467-512-42	ADAPTOR, AC (AC-PT1) (100E:UK)	
⚠	1-475-599-11	ADAPTOR, AC (AC-L10A)	
	1-475-950-21	REMOTE COMMANDER (RMT-811)	
	1-543-798-11	FILTER, CLAMP (FERRITE CORE) (100:US,CND/100E:AEP,UK)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (100E:JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (100:HK,E/100E:E,HK)	
	1-573-291-11	CONNECTOR, CONVERSION (21P) (100E:AEP,UK)	
⚠	1-696-819-11	CORD, POWER (100E:AUS)	
	1-765-080-11	CORD, CONNECTION (A/V) (1.5m)	
⚠	1-769-608-11	CORD, POWER (100:E/100E:AEP,E)	
	1-772-118-12	COMPACT DISK (PICTURE GEAR)	
⚠	1-782-476-11	CORD, POWER (100E:CN)	
⚠	1-783-374-11	CORD, POWER (100:HK/100E:UK,HK)	
⚠	1-790-073-11	CORD, POWER 2P (100:JE/100E:JE)	
⚠	1-790-107-22	CORD, POWER (100:US,CND)	
FigA	1-790-774-11	CORD, CONNECTION	
	3-053-056-01	LID, BATTERY CASE	
	3-057-401-01	HOOD, LENS	
	3-866-261-11	MANUAL, INSTRUCTION (MSAC-SR1)(NTSC) (ENGLISH) (100:US,CND,JE,HK,E)	
	3-866-261-21	MANUAL, INSTRUCTION (MSAC-SR1)(NTSC) (FRENCH) (100:CND)	
	3-866-261-31	MANUAL, INSTRUCTION (MSAC-SR1)(NTSC) (TRADITIONAL CHINESE) (100:HK,E/100E:HK)	
	3-866-261-41	MANUAL, INSTRUCTION (MSAC-SR1)(NTSC) (KOREAN) (100:JE,KR,E)	
	3-866-543-11	MANUAL, INSTRUCTION (PICTURE GEAR) (ENGLISH) (100:US,CND,JE,HK,E)	
	3-866-543-21	MANUAL, INSTRUCTION (PICTURE GEAR) (FRENCH) (100:CND)	
	3-866-543-31	MANUAL, INSTRUCTION (PICTURE GEAR) (TRADITIONAL CHINESE) (100:HK,E/100E:HK)	
	3-866-543-41	MANUAL, INSTRUCTION (PICTURE GEAR) (KOREAN) (100:JE,KR,E)	
	3-866-544-11	MANUAL, INSTRUCTION (PICTURE GEAR) (ENGLISH,RUSSIAN) (100E)	
	3-866-544-21	MANUAL, INSTRUCTION (PICTURE GEAR) (GERMAN,FRENCH) (100E:AEP,E,HK,JE,CN)	
	3-866-544-31	MANUAL, INSTRUCTION (PICTURE GEAR) (ITALIAN,DUTCH) (100E:AEP)	
	3-866-544-41	MANUAL, INSTRUCTION(PICTURE GEAR) (SPANISH,PORTUGUESE) (100:JE,HK,E/100E:AEP)	
	3-866-544-61	MANUAL, INSTRUCTION (PICTURE GEAR) (ARABIC,FRENCH) (100E:E,CN)	
	3-866-544-71	MANUAL, INSTRUCTION (PICTURE GEAR) (SIMPLIFIED CHINESE) (100E:E,JE,CN)	

Ref. No.	Part No.	Description	Remarks
	3-866-727-11	MANUAL, INSTRUCTION (MSAC-SR1)(PAL) (ENGLISH,RUSSIAN) (100E)	
	3-866-727-21	MANUAL, INSTRUCTION (MSAC-SR1)(PAL) (GERMAN,FRENCH) (100E:AEP,E,HK,JE,CN)	
	3-866-727-31	MANUAL, INSTRUCTION (MSAC-SR1)(PAL) (ITALIAN,DUTCH) (100E:AEP)	
	3-866-727-41	MANUAL, INSTRUCTION (MSAC-SR1)(PAL) (SPANISH,PORTUGUESE) (100:JE,HK,E/100E:AEP)	
	3-866-727-61	MANUAL, INSTRUCTION (MSAC-SR1)(PAL) (ARABIC,PERSIAN) (100E:E,CN)	
	3-866-727-71	MANUAL, INSTRUCTION (MSAC-SR1)(PAL) (SIMPLIFIED CHINESE) (100E:E,JE,CN)	
	3-867-752-11	MANUAL, INSTRUCTION (ENGLISH) (100:US,CND,JE,HK,E)	
	3-867-752-21	MANUAL, INSTRUCTION (FRENCH) (100:CND)	
	3-867-752-31	MANUAL, INSTRUCTION (SPANISH,PORTUGUESE) (100:JE,HK,E)	
	3-867-752-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (100:HK,E)	
	3-867-752-51	MANUAL, INSTRUCTION (ARABIC) (100:E)	
	3-867-752-61	MANUAL, INSTRUCTION (KOREAN) (100:JE)	
	3-867-753-11	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN) (100E:AEP,UK)	
	3-867-753-21	MANUAL, INSTRUCTION (SPANISH,PORTUGUESE) (100E:AEP)	
	3-867-753-31	MANUAL, INSTRUCTION (FRENCH,DUTCH) (100E:AEP)	
	3-867-753-41	MANUAL, INSTRUCTION (GERMAN,ITALIAN) (100E:AEP)	
	3-867-753-51	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN) (100E:E,HK,JE,AUS,CN)	
	3-867-753-61	MANUAL, INSTRUCTION (FRENCH,GERMAN) (100E:E,HK,JE,CN)	
	3-867-753-71	MANUAL, INSTRUCTION (ARABIC,PERSIAN) (100E:E,CN)	
	3-867-753-81	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (100E:E,JE,CN)	
	3-867-753-91	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (100E:HK)	
	A-7033-740-A	MEMORY STICK	
FigB	A-7094-296-A	SERIAL PORT ADAPTOR (MSAC-SR1)	

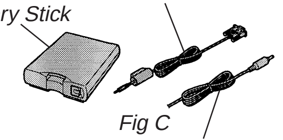


Fig B
Serial port adaptor
for Memory Stick

Fig A
PC serial cable

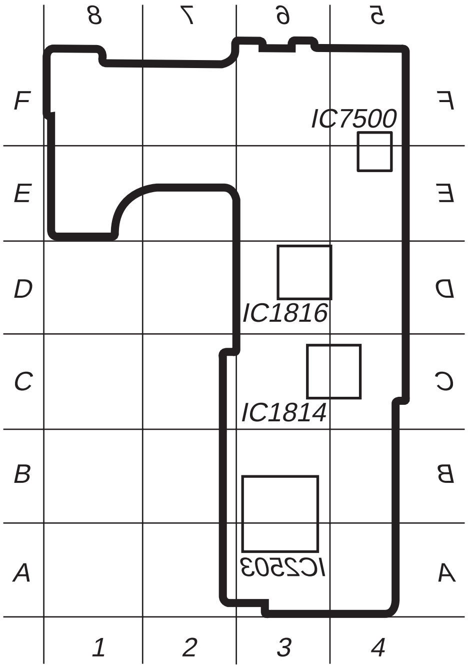
Fig C
AC power adaptor
for Serial port adaptor

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

〈PARTS REFERENCE SHEET〉

You can find the parts position of location of mount locations applying to MR-44 board of a set.

MR-44 DCR-PC100/PC100E SIDE A

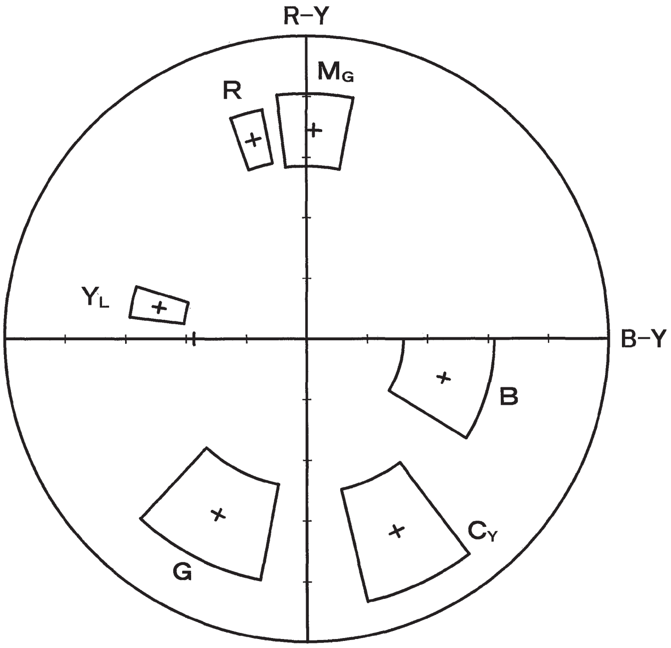


8
7
6
5
F
E
D
C
B
A
IC7500
IC1816
IC1814
IC2503
1
2
3
4

SIDE B DCR-PC100/PC100E **MR-44**

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

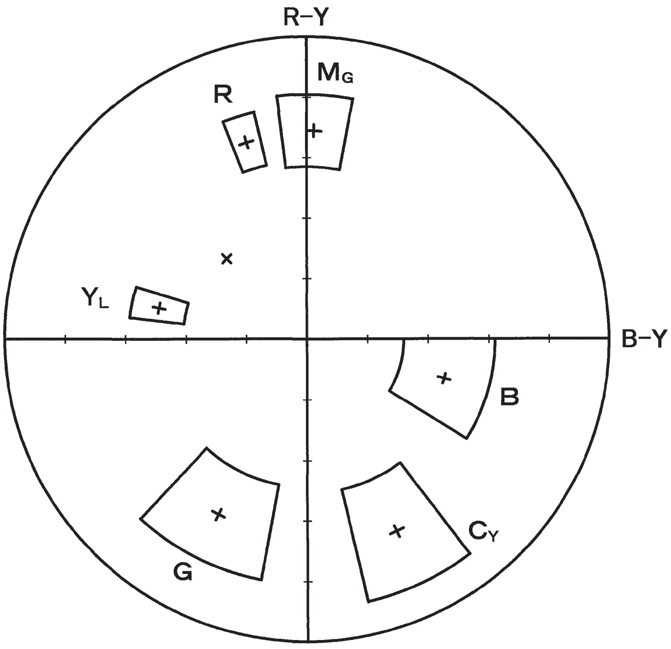
For NTSC model


R–Y
MG
R
YL
B–Y
B
CY
G

DCR-PC100

Take a copy of CAMERA COLOR REPRODUCTION FRAME and Parts referencesheets with a clear sheet for use.

For PAL model


R–Y
MG
R
YL
B–Y
B
CY
G

DCR-PC100E

Sony EMCS Co.

2001L1600-1

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DCR-PC100/PC100E

RMT-811

US Model
Canadian Model
Korea Model
DCR-PC100
AEP Model
UK Model
Australian Model
Chinese Model
DCR-PC100E
E Model
Hong Kong Model
Tourist Model
DCR-PC100/PC100E

SONY®

SERVICE MANUAL

2000. 02

SUPPLEMENT-1

File this supplement-1 with the Service Manual.
(99-028)

1. Correction of service tool parts code number. .... (page 1)
2. Changed of adjustment data. .... (page 2 to 4)

[CORRECTION]

Correct your service manual as shown below.

▨ : Changed portion.

<table>
<tr><th>Page</th><th>Changed contents</th></tr>
<tr><td>5-4</td><td>
5-1. CAMERA SECTION ADJUSTMENT
1-1-1. List of Service Tools
<table>
<tr><th>Ref. No.</th><th>Name</th><th>Parts Code</th><th>Usage</th></tr>
<tr><td>J-1</td><td>Filter for color temperature correction (C14)</td><td>J-6080-058-A</td><td>Auto white balance adjustment/check
White balance adjustment/check</td></tr>
<tr><td>J-2</td><td>ND filter 1.0</td><td>J-6080-808-A</td><td>White balance check</td></tr>
<tr><td></td><td>ND filter 0.4</td><td>J-6080-806-A</td><td>White balance check</td></tr>
<tr><td></td><td>ND filter 0.1</td><td>J-6080-807-A ▨</td><td>White balance check</td></tr>
</table>
</td></tr>
</table>

[SUPPLEMENT]

☞ : Added portion. ☛ : Changed portion.

<table>
<tr><th>Page</th><th>Changed contents</th></tr>
<tr><td>5-14</td><td>

3. Modification of F Page Data

Modifying Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: FF, and check the data.
(Version check of the camera microprocessor (VC-227 board IC302))

<table>
<tr><th>Data</th><th>Version</th></tr>
<tr><td>01</td><td>1.0</td></tr>
<tr><td>02</td><td>2.0</td></tr>
<tr><td>03</td><td>3.0</td></tr>
<tr><td>04</td><td>4.0</td></tr>
</table>

☞

3) If the version is “4.0 and higher” , input the following data to each address of F page. ☛

</td></tr>
<tr><td>5-18</td><td>

5. E Page Table

<table>
<tr><th>Address</th><th>Remark</th></tr>
<tr><td></td><td></td></tr>
<tr><td>70</td><td>Fixed data-1</td></tr>
<tr><td>71</td><td>(Initialized data)</td></tr>
<tr><td>72</td><td></td></tr>
<tr><td>73</td><td></td></tr>
<tr><td>74</td><td>Fixed data-2</td></tr>
<tr><td>75</td><td>Fixed data-1</td></tr>
<tr><td>76</td><td>Fixed data-2</td></tr>
<tr><td>77</td><td></td></tr>
<tr><td>78</td><td>Fixed data-1</td></tr>
<tr><td>79</td><td></td></tr>
<tr><td>7A</td><td></td></tr>
<tr><td>7B</td><td></td></tr>
<tr><td>7C</td><td></td></tr>
</table>

☛

</td></tr>
<tr><td>5-19</td><td>

<table>
<tr><td>DB</td><td></td></tr>
<tr><td>DC</td><td>Fixed data-2</td></tr>
<tr><td>DD</td><td>(Modified data. Copy the data built in the same model.)</td></tr>
<tr><td>DE</td><td></td></tr>
<tr><td>DF</td><td>Fixed data-1</td></tr>
<tr><td>E0</td><td>(Initialized data)</td></tr>
<tr><td>E1</td><td></td></tr>
<tr><td>E2</td><td></td></tr>
</table>

☛

<table>
<tr><td>EB</td><td></td></tr>
<tr><td>EC</td><td>Fixed data-2</td></tr>
<tr><td>ED</td><td>(Modified data. Copy the data built in the same model.)</td></tr>
<tr><td>EE</td><td></td></tr>
<tr><td>EF</td><td>Fixed data-1</td></tr>
<tr><td>F0</td><td>(Initialized data)</td></tr>
<tr><td>F1</td><td></td></tr>
</table>

☛

</td></tr>
</table>

☞ : Added portion. ▨☞ : Changed portion.

Page	Changed contents
5-19	**6. 7 Page Table**

Address	Initial value		Remark
	NTSC	PAL	
4E	00	00	Fixed data-1 (Initialized data) Addresses 4E to 67 are only for the camera microprocessor ver. 3.0 and higher. ▨☞ **Note:** When replaced a camera microprocessor version 1.0 or 2.0 with a camera microprocessor version 3.0 and higher, input the initial value to address: 4E to 67. ▨☞ Refer to “3. Modification of F Page Data” for the camera microprocessor version.
4F	00	00	
50	1E	1E	
51	18	18	
52	18	18	
53	19	19	
54	10	10	
55	10	10	
56	10	10	
57	10	10	
58	19	19	
59	15	15	
66	3C	3C	
67	3C	3C	
68	FF	FF	Fixed data-1 (Initialized data) Addresses 68 to 6B are only for the camera microprocessor ver. 4.0 and higher. **Note:** When replaced a camera microprocessor version 1.0, 2.0 or 3.0 with a camera microprocessor version 4.0 and higher, input the initial value to address: 68 to 6B. Refer to “3. Modification of F Page Data” for the camera microprocessor version. ☞ **Input Method:** 1) Select page: 0, address: 01, and set data: 01. 2) Input the initial value to address: 68 to 6B. **Note:** Press the PAUSE button of the adjustment remote commander each time to set the data. 3) Select page: 0, address: 01, and set data: 00.
69	FF	FF	
6A	FF	FF	
6B	FF	FF	

Page 5-20

Table. 5-1-7.

☞ : Changed portion.

Page	Changed contents
5-44	**3. Battery End Check (VC-227 board)** **Adjusting method:** 1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.0 ± 0.1Vdc. 2) Turn off the power supply. 3) Turn on the HOLD switch of the adjustment remote commander. 4) Turn on the power supply. 5) Load a cassette, and set to the camera recording mode. ☞ 6) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.50 ± 0.01Vdc. 7) Record the camera signal for a minute. ☞ 8) Playback the recorded section and check that the playback picture and sound are normal. ☞

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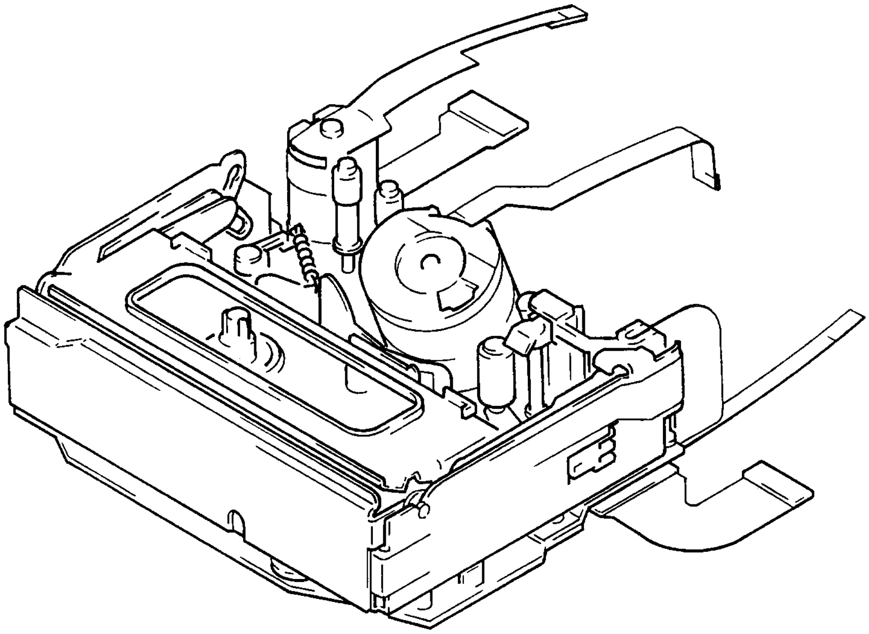
DV MECHANICAL ADJUSTMENT MANUAL I

D MECHANISM

File with the SERVICE MANUAL.

Mini DV Digital Video Cassette



Digital MECHANISM

SONY®

MICROFILM

TABLE OF CONTENTS

Section Title Page

1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND MAINTENANCE

1-1. Cassette Compartment Assembly 3

2. PERIODIC CHECK AND MAINTENANCE

2-1. Cleaning of Rotary Drum Assembly 4
2-2. Cleaning of Tape Path System 4
2-3. Periodic Checks 5
2-4. Service Jigs List 6
2-5. Use of Mode Selector II 8
  2-5-1. Outline 8
  2-5-2. Operation 9

3. MECHANISM SECTION CHECKS, ADJUSTMENTS AND REPLACEMENTS

3-1. Drum Assembly (Motor FPC assembly and elastic connectors) 12
3-2. HC Assembly (HC roller assembly, HC slide assembly and HC arm assembly) 13
3-3. TG1 Guide 13
3-4. TG3 Guide 14
3-5. TG7 Guide 14
3-6. S Positioning and T Positioning 14
3-7. Lock Lever and Slider Follower 15
3-8. LM Motor Assembly 15
3-9. Capstan Motor 15
3-10. LED Base Assembly 16
3-11. TG7 Arm Assembly 17
3-12. Pinch Arm Assembly 17
3-13. T Hard Break, S Break ARM and S Hard 18
3-14. RVS Break and LS Cam Plate 19
3-15. TG7 Arm Block Assembly and Tension Regulator Band Assembly 20
3-16. FWD Position Adjustment 21
3-17. FWD Back Tension Adjustment 21
3-18. Reel Table Torque Check 22
3-19. T Reel Table Assembly 22
3-20. S Reel Table Assembly 23
3-21. Height Adjustment for Each Reel Table 23
3-22. LS Chassis Block Assembly, Gooseneck Assembly, Relay Gear, Lock Slider, Compulsion Arm Assembly, Cam Slider and Pinch Release Arm 24
3-23. GL (S) Block Assembly (Coaster (S) Assembly, GL (S) Assembly and Rail (S)) 25
3-24. GL (T) Block Assembly (Coaster (T) Assembly, GL (T) Assembly, Rail (T) and TG5 Assembly) 26
3-25. Mode Cam Assembly and FP-245 Flexible Board 28
3-26. LS Arm Assembly, EJ Arm and Cam (S) Assembly 29
3-27. Adjustment Arm Assembly, Relay Belt, Relay Pulley Assembly and Conversion Pulley Assembly 30
3-28. Gear Retainer, Position Arm, RVS Stopper Assembly and Gear No. 1, 2 and 3 31
3-29. Mode Slider 32
3-30. Each Gear and Mode Cam Assembly Phase Adjustment 33

Section Title Page

4. TAPE PATH ADJUSTMENT

4-1. Preparation for Adjustment 34
4-2. Tracking Adjustment 35
4-3. TG1, TG2 and TG3 Guide Adjustment 35
4-4. TG7 Guide Adjustment 36
4-5. Checks After Adjustments 36

5. EXPLODED VIEWS

Cassette Compartment and Drum Assembles 38
LS Chassis Assembly 39
Mechanism Chassis Assembly (1) 40
Mechanism Chassis Assembly (2) 41

6. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM 43

1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND MAINTENANCE

PREPARATION

- For removal of the cabinet and boards, refer to “Disassembly” in each service manual.

- When the adjustment and maintenance for the mechanical section are performed, select the condition of mechanical deck using mode selector II for easy use to operate. Refer to “2-5. How to handle the mode selector II” to select the following each ☐ mode.

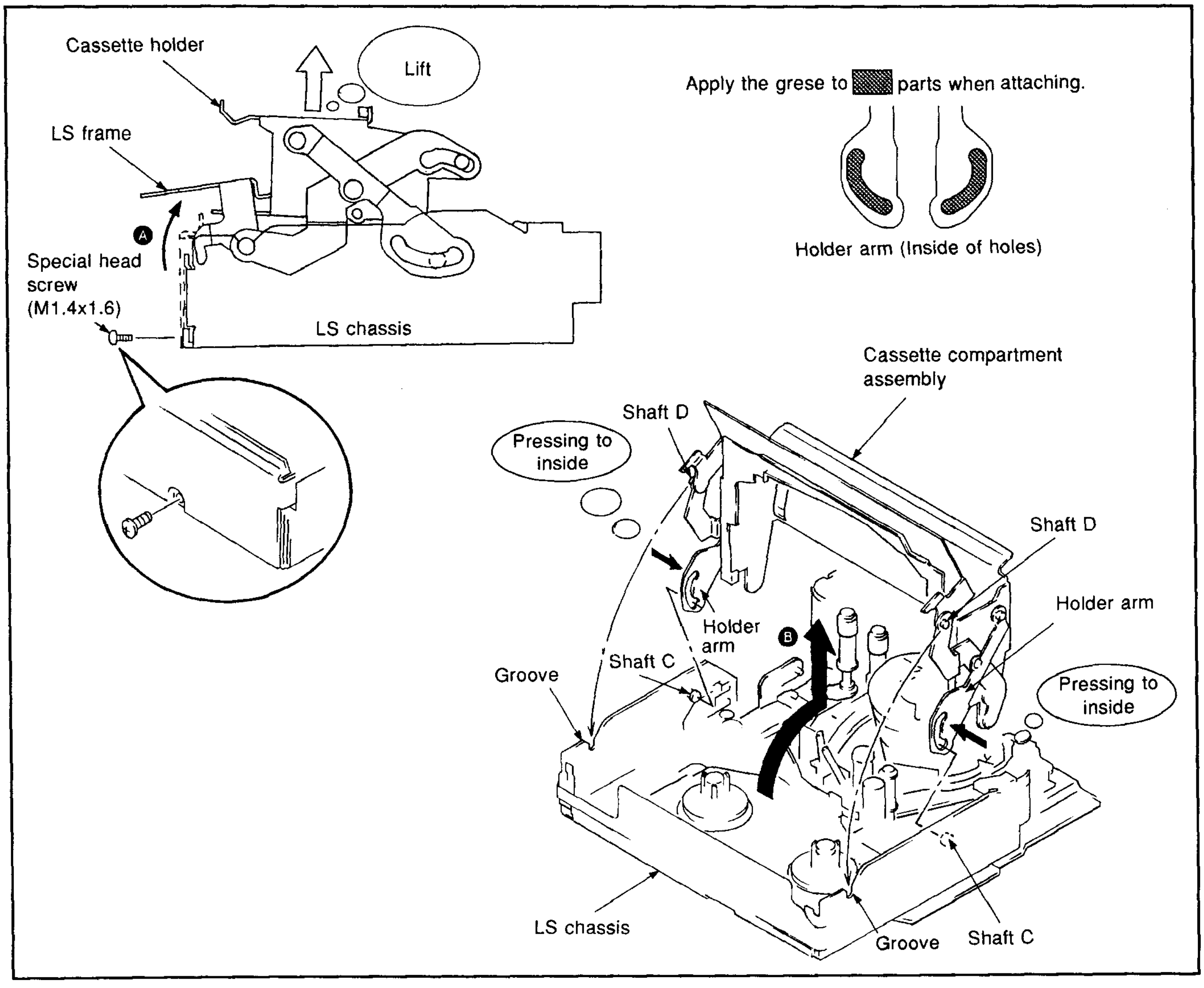
1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removing

1) Set the USE—EJ mode.
2) Remove the screw.
3) Lift the cassette holder, and move the LS frame to the direction of arrow Ⓐ.
4) Lift the cassette compartment assembly to the direction of arrow Ⓑ, then remove pressing the left and right holder arms to inside.

2. Attaching

1) Set the USE—EJ mode.
2) Apply the grease (two positions, 1.5 mm dia.) to the cassette compartment assembly, then attach it to the shaft C pressing the holder arms to inside.
   Grease: Floil Grease (SG-941)
3) Pull down the cassette compartment assembly to front, attach the shaft D to a groove of LS chassis, then pull down the LS frame to front.
4) Attach the screw.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)


Cassette holder
Lift
LS frame
Ⓐ
Special head screw (M1.4x1.6)
LS chassis
Apply the grese to ▩ parts when attaching.
Holder arm (Inside of holes)
Cassette compartment assembly
Shaft D
Pressing to inside
Shaft D
Holder arm
Holder arm
Ⓑ
Shaft C
Groove
Pressing to inside
LS chassis
Groove
Shaft C

2. PERIODIC CHECK AND MAINTENANCE

- Carry out the following maintenance and periodic checks not only to fully display the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regardless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1) Press a wiping cloth (Ref No. J-2) moistened with cleaning fluid (Ref No. J-1) against the rotary drum assembly gently, and clean it while rotating the upper rotary drum assembly slowly with your finger in the counterclockwise direction.

Note: Do not rotate the motor on power or rotate the upper rotary drum assembly in the clockwise direction with your finger. The head tip will also be damaged if the wiping cloth is moved perpendicularly against it. Therefore, be sure to follow the above instructions when cleaning the rotary drum assembly.

2-2. CLEANING OF TAPE PATH SYSTEM (See Fig. 1.)

1) In the EJECT mode, clean the tape path systems (TG-1, 2, 3, 4, 5, 6, 7, capstan) and the lower drum using a superfine applicator (Ref No. J-3) moistened with cleaning fluid.

Note 1: Make sure that no oil or grease of the link mechanisms sticks to the superfine applicator (Ref No. J-3.)

Note 2: Do not use a applicator moistened with alcohol to the other guide cleaning. But clean the pinch roller using alcohol.

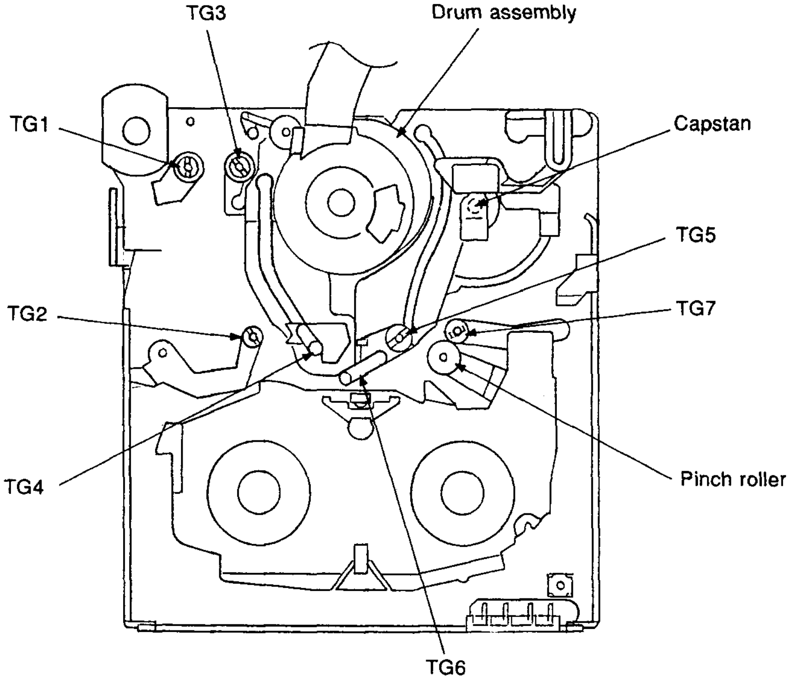


Fig. 1.

2-3. PERIODIC CHECKS

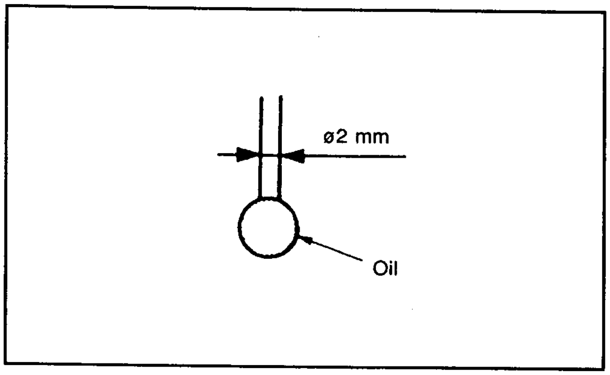
Location of Maintenance and Check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of the oil
	Cleaning and degaussing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Be careful of the oil
Driving System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-748-734-01
	Capstan shaft (Bearing)	—	☆	—	☆	—	☆	—	☆	—	☆	Make sure that no oil gets on the tape path surface.
	Conversion gear shaft Relay pulley shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7026-007-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD RVS } Torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note: When overhauling, refer to the checks above and replace parts.

Note: Oiling

- Be sure to use the specified oil. (If the viscosity of the oil is different, etc., problems may result.)
  Oil: Part No. 7-661-018-18
  (Mitsubishi Diamond Oil Hydrofluid NT-68)
- When lubricating bearings, be sure to use oil free from dust, etc. (If oil containing dusts, etc. is used, bearings may wear out, burn, etc.)
- A drop of oil means the amount on the tip of a 2 mm diameter stick as shown in the Fig 5.
- FLOIL Grease (SG-941): Part No. 7-662-001-39



2-4. SERVICE JIGS LIST

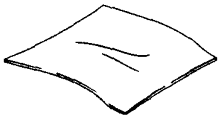
Ref. No.	Name	Part No.	Fixtur No.	Usage, Others Application, etc
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Wiping cloth	7-741-900-53		
J-3	Super fine applicator (Made by NIPPON APPLICATOR (P752D))			
J-4	Mirror (Small oval type)	J-6080-840-A	GD-2038	Tape path
J-5	Tracking tape (XH2-1) (NTSC/PAL)	8-967-997-01		Tape path
J-6	RVS torque tape	J-6082-327-A		
J-7	FWD torque (D mechanism) & RVS back tension (E mechanism) tape	J-6082-328-A		
J-8	FWD back tension tape (D/E mechanism)	J-6082-329-A		
J-9	Cassette standerd plate	J-6082-330-A		
J-10	Reel standard plate	J-6082-331-A		
J-11	Dummy drum (D mechnism)	J-6082-332-A		
J-12	TG1 preset base (D mechanism)	J-6082-333-A		
J-13	TG5 preset base (D mechanism)	J-6082-334-A		
J-14	Washer fixture ø0.8	J-6082-233-A		
J-15	Torque driver	J-9049-330-A		
J-16	Screwdriver for tape path	J-6082-026-A		For adjusting tape guide
J-17	Adjusting remote commander (RM-95 remodeled partly) Note1	J-6082-053-B		
J-18	Mode selector II	J-6082-282-A		For all models
J-19	Mode selector II change connctor board	J-6082-335-A		
J-20	Screw lock G (1401B)	7-432-114-11		
J-21	FWD/BACK Tension adjustment driver	J-6082-187-A		For adjusting FWD position and FWD back tension

Other equipment used
- Oscilloscope

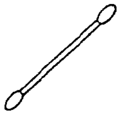
Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replase with the new micro processor (8-759-148-35).

J-1

J-2



J-3



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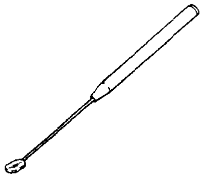

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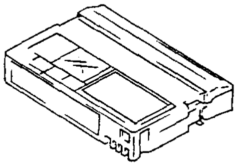

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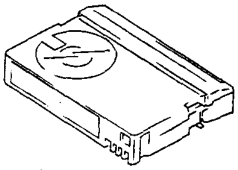

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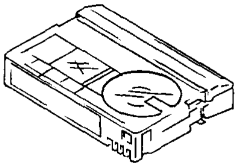

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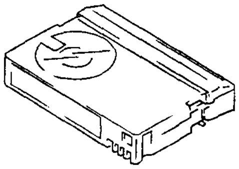

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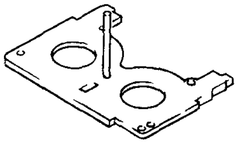

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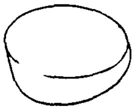
J-11



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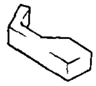

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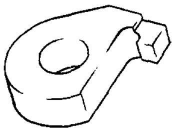
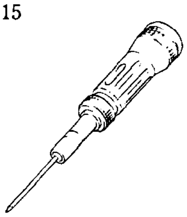


J-14

J-15



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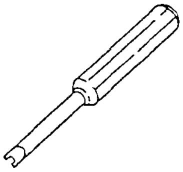

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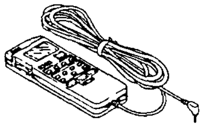

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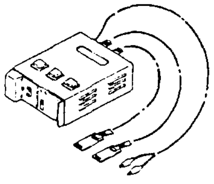
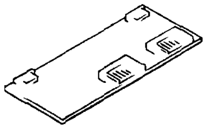
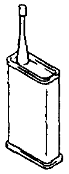


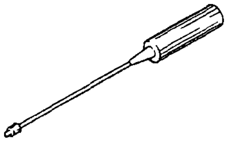
J-19



J-20



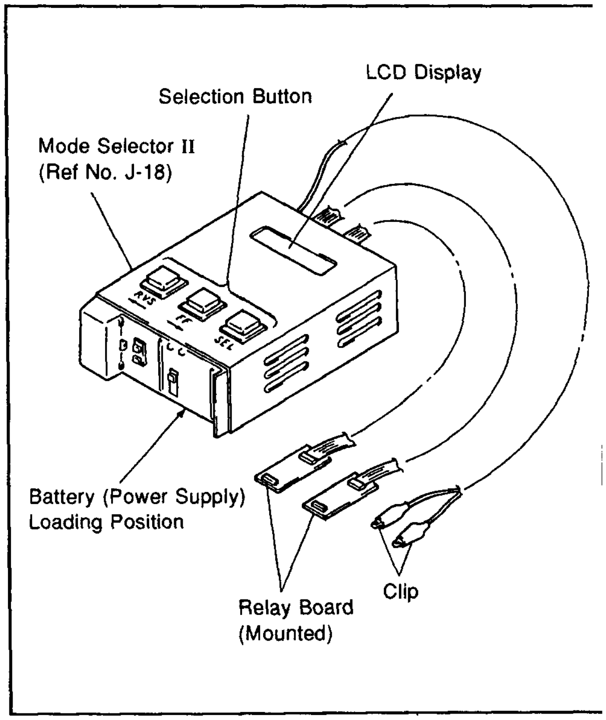
J-21



2-5. USE OF MODE SELECTOR II

2-5-1. Outline

This unit is a mechanism drive tool which supplements the maintenance of each mechanism deck. Its functions are described below.



LCD Display
Selection Button
Mode Selector II
(Ref No. J-18)
Battery (Power Supply)
Loading Position
Relay Board
(Mounted)
Clip

1. **Manual test**

   A mode which drives the motor only while the switch is ON. It enables the operator to control the motor as desired.

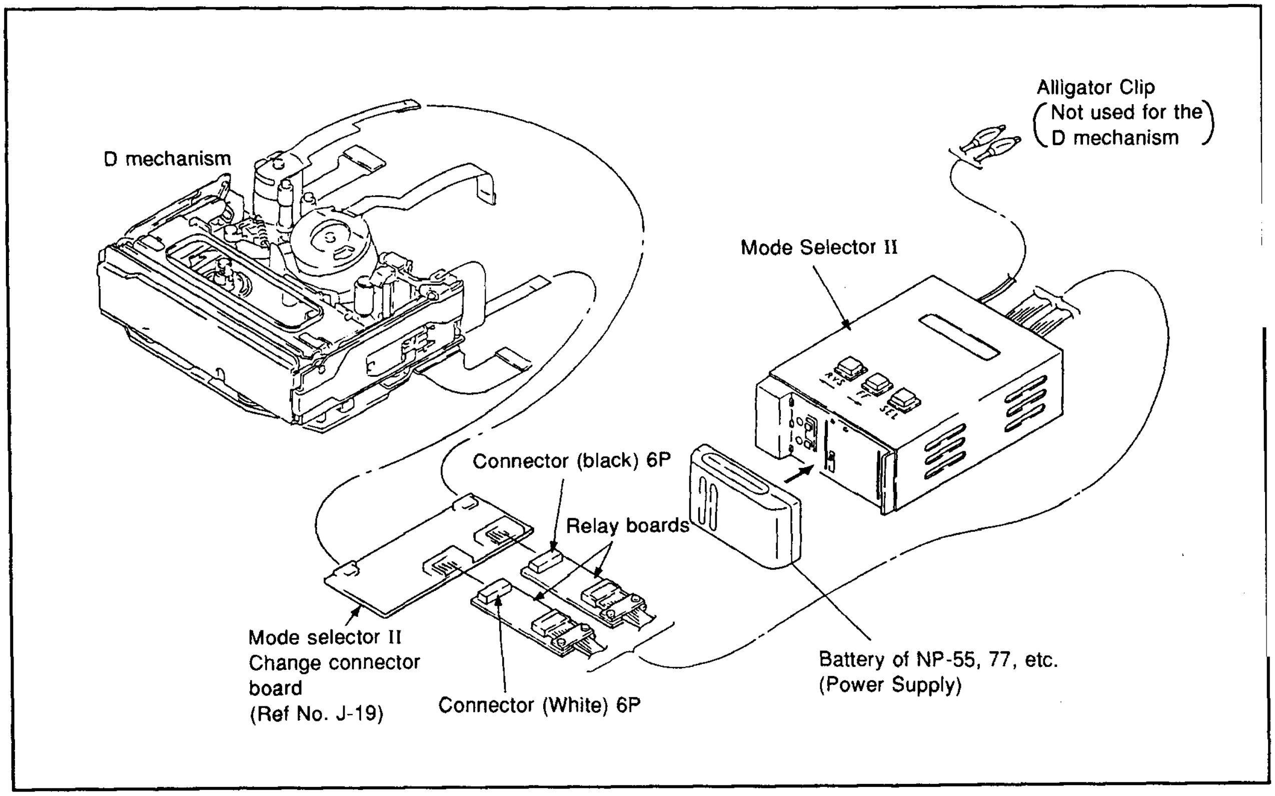
2. **Step test**

   A mode which drives the motor until the current condition detected by the sensor changes to another condition. It enables the movements made by the motor in each operation to be controlled while being checked.

3. **Auto test**

   A mode that checks if the mechanism operates normally according to the condition shift table recorded in the unit for each mechanism deck. All the conditions of the decks are checked through a series of operations.
   An error message is displayed if incorrect shifts and conditions are detected and operations are stopped.

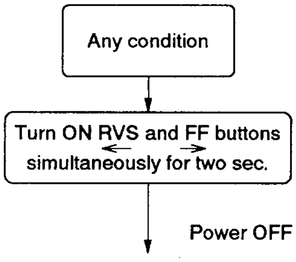
Mode Selector II (J-6082-282-A) Connection

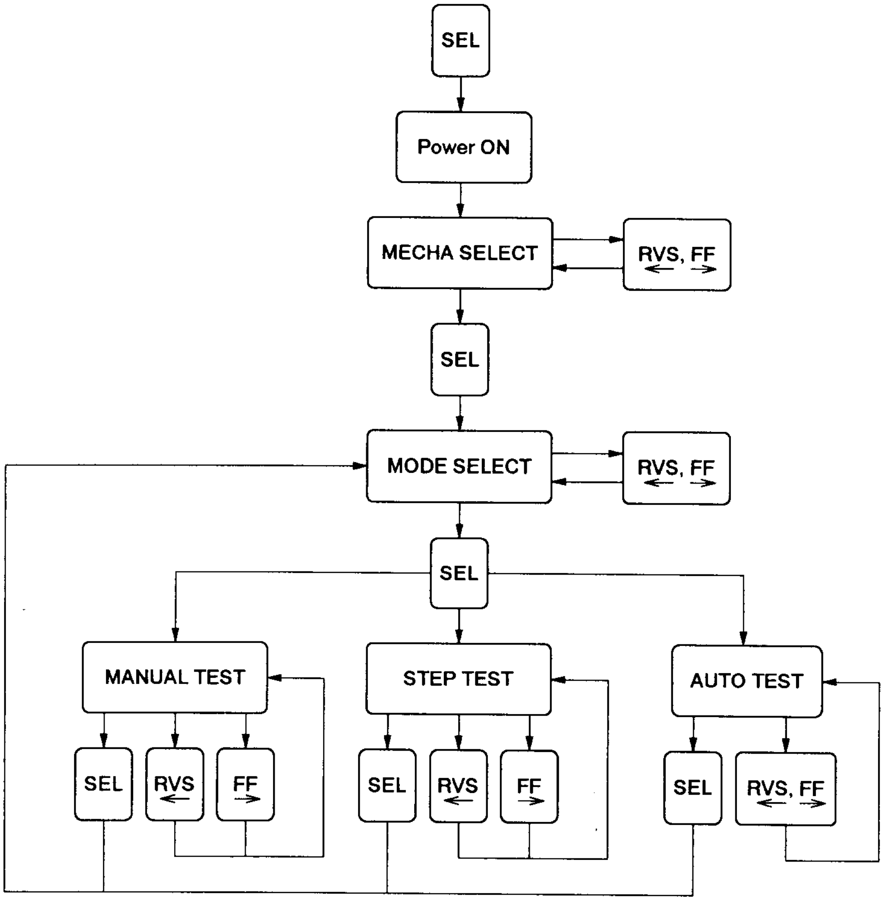


D mechanism
Alligator Clip
(Not used for the D mechanism)
Mode Selector II
Connector (black) 6P
Relay boards
Mode selector II
Change connector
board
(Ref No. J-19)
Connector (White) 6P
Battery of NP-55, 77, etc.
(Power Supply)

2-5-2. Operation

1. Operation flow chart

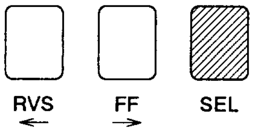

Any condition
Turn ON RVS and FF buttons simultaneously for two sec.
←
→
Power OFF


SEL
Power ON
MECHA SELECT
RVS, FF
← →
SEL
MODE SELECT
RVS, FF
← →
SEL
MANUAL TEST
STEP TEST
AUTO TEST
SEL
RVS
←
FF
→
SEL
RVS
←
FF
→
SEL
RVS, FF
← →

(Excluding the K mechanism)

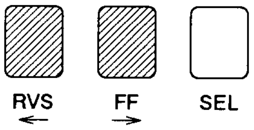
2. Turning ON the mode selector II

To turn ON the power supply, turn on the SEL button.



3. Turning OFF the mode selector II

To turn OFF the power supply, turn on the RVS and FF buttons simultaneously for more two seconds.



4. Mechanism selection

Immediately after the power supply has been turned on, "MECHA SELECT" will be displayed on the LCD. Select the desired mechanism using the $\underset{\leftarrow}{\text{RVS}}$ and $\underset{\rightarrow}{\text{FF}}$ buttons, and press the SEL button to complete the selection. (Fig. I shows the D mechanism.)

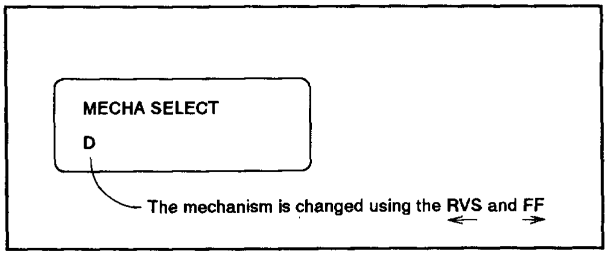

MECHA SELECT
D
The mechanism is changed using the RVS and FF

Fig. I

5. Mode selection

Select the test-"MANUAL", "STEP", and "AUTO"- to be executed.
Select the desired mode on the screen using the $\underset{\leftarrow}{\text{RVS}}$ and $\underset{\rightarrow}{\text{FF}}$ buttons, and press the SEL button to complete the selection.

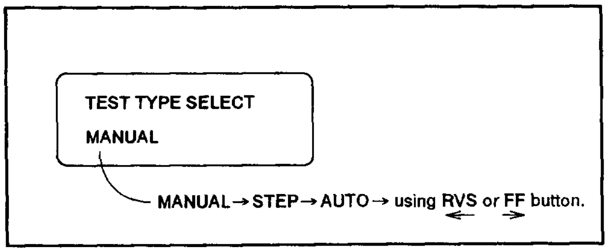

TEST TYPE SELECT
MANUAL
MANUAL→STEP→AUTO→ using RVS or FF button.

Fig. II

6. Manual test

A mode that drives the motor only when the $\underset{\leftarrow}{\text{RVS}}$ or $\underset{\rightarrow}{\text{FF}}$ button is pressed.

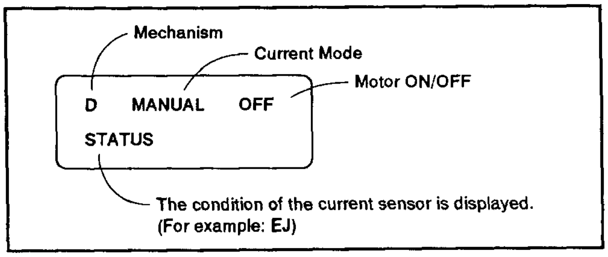

Mechanism
Current Mode
Motor ON/OFF
D MANUAL OFF
STATUS
The condition of the current sensor is displayed. (For example: EJ)

Fig. III

7. Step test

A mode that drives the motor until the direction of motor operations is set using the $\underset{\leftarrow}{\text{RVS}}$ and $\underset{\rightarrow}{\text{FF}}$ buttons and the current condition is changed.

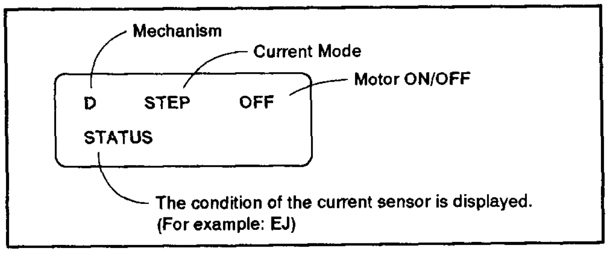

Mechanism
Current Mode
Motor ON/OFF
D STEP OFF
STATUS
The condition of the current sensor is displayed. (For example: EJ)

Fig. IV

8. Auto test

Each mechanism deck is checked for its recorded operation sequence. The check is executed by comparing the sensor signals generated in the operation sequence with the recorded operation sequence.
The same operation is carried out when the $\underset{\leftarrow}{\text{RVS}}$ or $\underset{\rightarrow}{\text{FF}}$ button is turned on.

Note: Sometimes the AUTO TEST spoils sequence due to a small range of $\boxed{\text{S. OFF}}$, but this is not a D mechanical trouble.

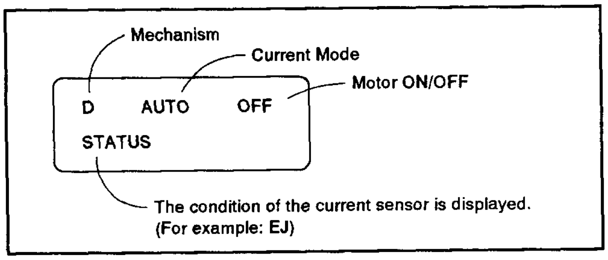

Mechanism
Current Mode
Motor ON/OFF
D AUTO OFF
STATUS
The condition of the current sensor is displayed. (For example: EJ)

Fig. V

Mechanism condition (position) shifting order

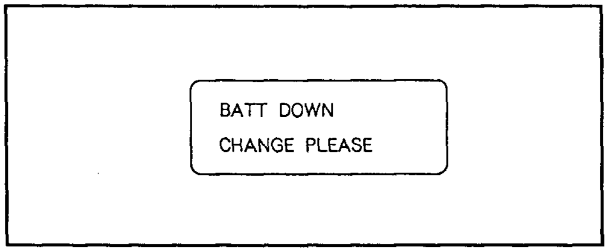
After selecting the mechanism, select one mode from the two test modes, excluding the AUTO test. Then press the $\underset{\leftarrow}{\text{RVS}}$ or $\underset{\rightarrow}{\text{FF}}$ button and specify the mechanism condition (position). (Displayed at the STATUS area)

EJ↔USE↔S. OFF↔D. ON↔LE↔STOP↔FF↔
R/P↔RVS

MD name Code					D mechanism
A	B	C	D		
1	0	1	0	1	EJ
1	1	1	0	2	USE
1	1	0	0	3	S. OFF
1	1	0	1	4	D. ON
1	0	0	1	5	LE
0	1	0	1	6	STOP
0	1	1	1	7	FF
1	0	1	1	8	R/P
0	0	1	1	9	RVS

9. Battery alarm display

When the battery voltage (power supply unit of the unit) drops, this alarm is displayed, no operations can be carried out and the battery must be changed.



BATT DOWN
CHANGE PLEASE

Fig. VI

3. MECHANISM SECTION CHECKS, ADJUSTMENTS AND REPLACEMENTS

3-1. DRUM ASSEMBLY (MOTOR FPC ASSEMBLY AND ELASTIC CONNECTORS)

1. Removing

<Motor FPC assembly and elastic connectors>

- Remove the two screws to remove the motor FPC assembly and elastic connectors.

<Drum assembly>

- Remove the three of drum fitting screw assembly to remove the drum assembly.

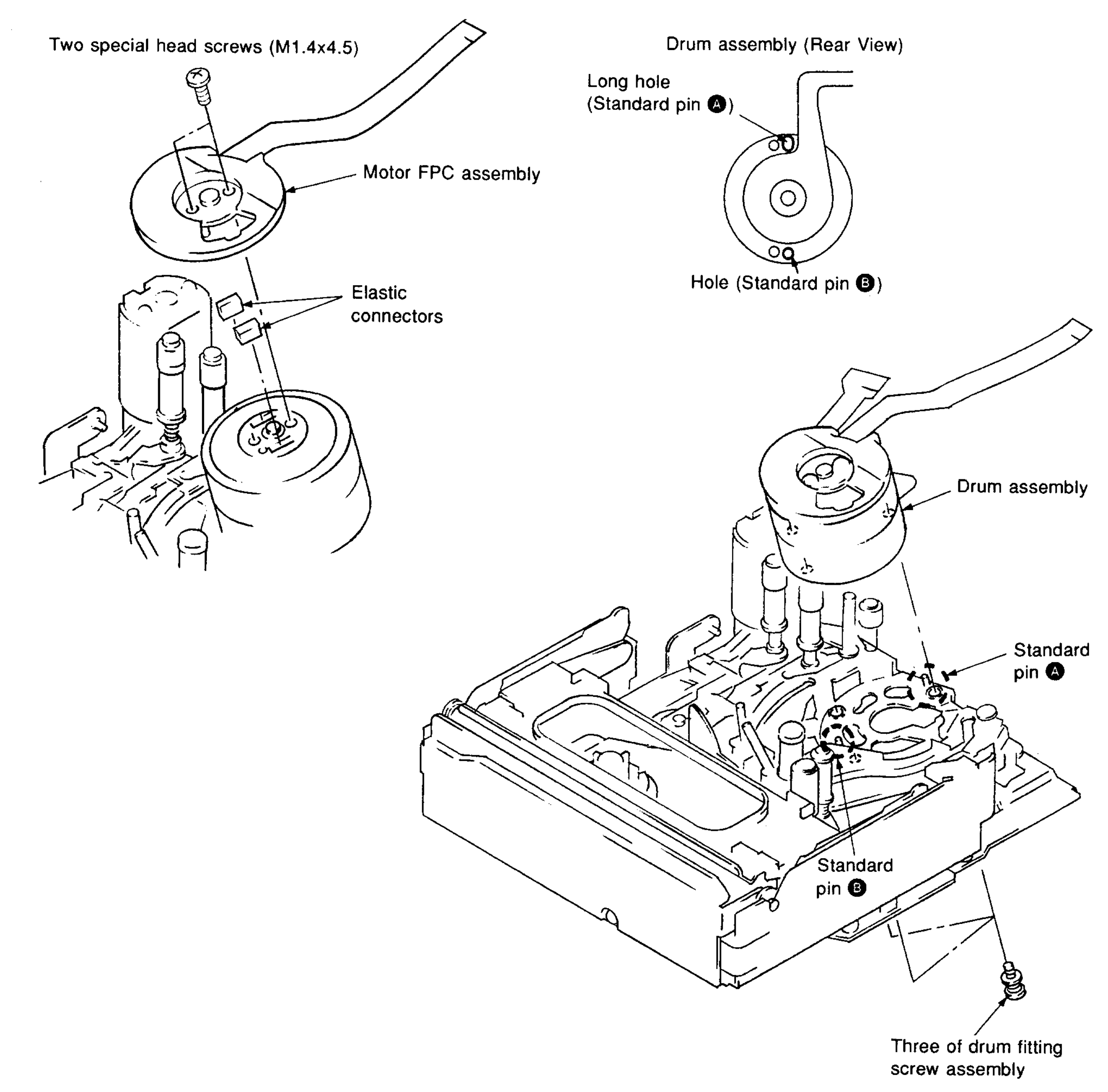
2. Attaching

<Motor FPC assembly and elastic connectors>

1) Attach the elastic connectors.
2) Attach the motor FPC assembly with two screws. (Pay attention to adjust the position of holes.)
   Fixing torque: 0.0490 N • m (0.5 kg • cm)

<Drum assembly>

1) Attach the holes on the rear side of drum assembly to standard pin. (Pay attention to the direction of the drum.)
2) Attach the three of drum fitting screw assembly.
   Fixing torque: 0.0392 N • m (0.4 kg • cm)
3) Refer to 2-1., perform the cleaning of drum assembly.
4) Carry out the tape path adjustment. (Refer to "4. TAPE PATH ADJUSTMENT".)



Two special head screws (M1.4x4.5)
Motor FPC assembly
Elastic connectors
Drum assembly (Rear View)
Long hole (Standard pin Ⓐ)
Hole (Standard pin Ⓑ)
Drum assembly
Standard pin Ⓐ
Standard pin Ⓑ
Three of drum fitting screw assembly

3-2. HC ASSEMBLY
(HC ROLLER ASSEMBLY, HC SLIDE ASSEMBLY AND HC ARM ASSEMBLY)

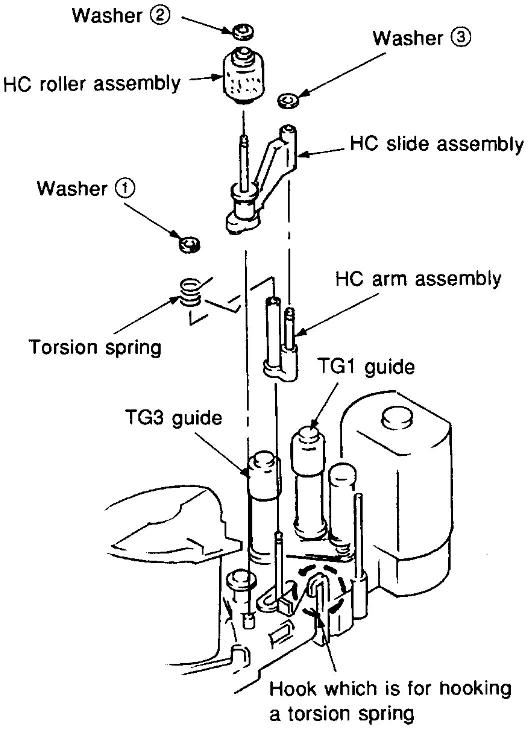
1. Removing

1) Remove the washer ①, then remove the HC arm assembly and torsion spring.
2) Remove the washer ② and remove the HC roller assembly.
3) Remove the washer ③ and remove the HC slide assembly.

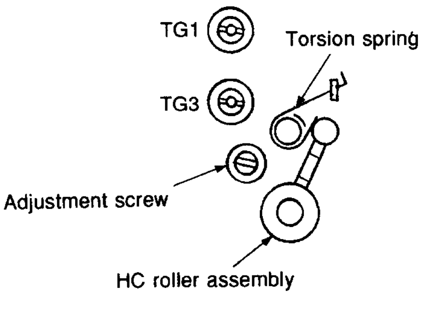
2. Attaching

1) Attach the HC slide assembly to the HC arm assembly with the washer ③.
2) Attach the HC roller assembly to the HC slide assembly with the washer ②.
3) Attach the torsion spring and HC assembly with the washer ①.

Note: Pay attention to attach the torsion spring.


Washer ②
Washer ③
HC roller assembly
HC slide assembly
Washer ①
HC arm assembly
Torsion spring
TG1 guide
TG3 guide
Hook which is for hooking a torsion spring

Hooking the torsion spring


TG1
Torsion spring
TG3
Adjustment screw
HC roller assembly

3-3. TG1 GUIDE

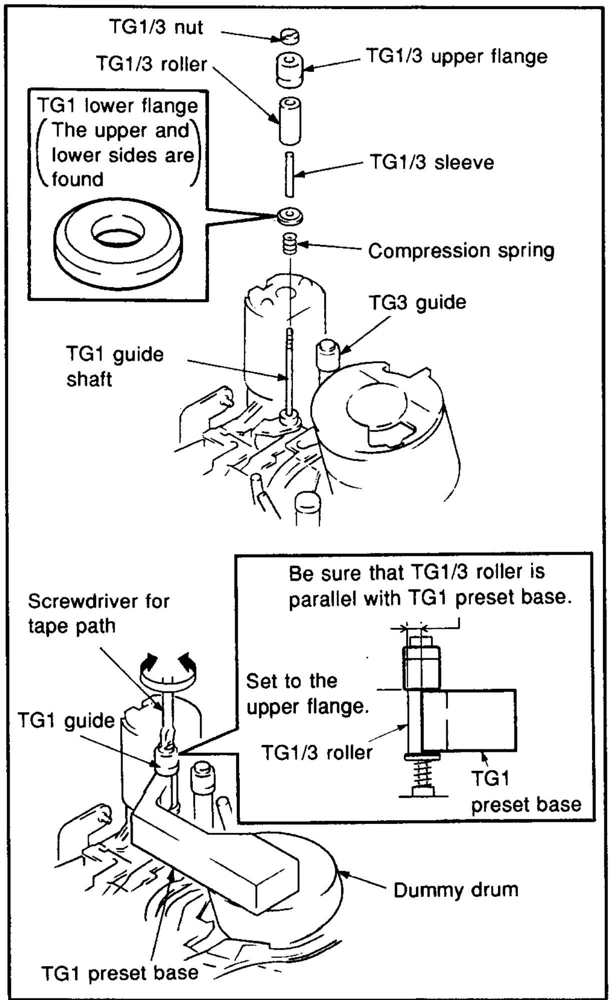
1. Removing

- Remove the TG1/3 nut with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG1/3 upper flange, TG1/3 roller, TG1/3 sleeve, TG1 lower flange and compression spring.

2. Attaching

1) Attach in the order of compression spring TG1 lower flange, TG1/3 sleeve, TG1/3 roller, TG1/3 upper flange and TG1/3 nut.
2) Refer to 3-1. to remove the drum assembly and attach the dummy drum (Ref No. J-11).
3) Put the TG1 preset base (Ref No. J-12) on the dummy drum, adjust the TG1/3 nut with a screwdriver for tape path (Ref No. J-16) to meet the height of TG1/3 upper flange and a jig.
4) Refer to 3-1. and attach the drum assembly after removing each jig.
5) Refer to 2-2. clean the TG1 guide.
6) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)

Note: If the TG1 guide shaft is damaged, it will be necessary to replace the mechanical chassis block assembly. (Refer to "5. EXPLODED VIEWS".)


TG1/3 nut
TG1/3 roller
TG1/3 upper flange
TG1 lower flange
(The upper and lower sides are found)
TG1/3 sleeve
Compression spring
TG3 guide
TG1 guide shaft
Be sure that TG1/3 roller is parallel with TG1 preset base.
Screwdriver for tape path
Set to the upper flange.
TG1 guide
TG1/3 roller
TG1 preset base
Dummy drum
TG1 preset base

3-4. TG3 GUIDE

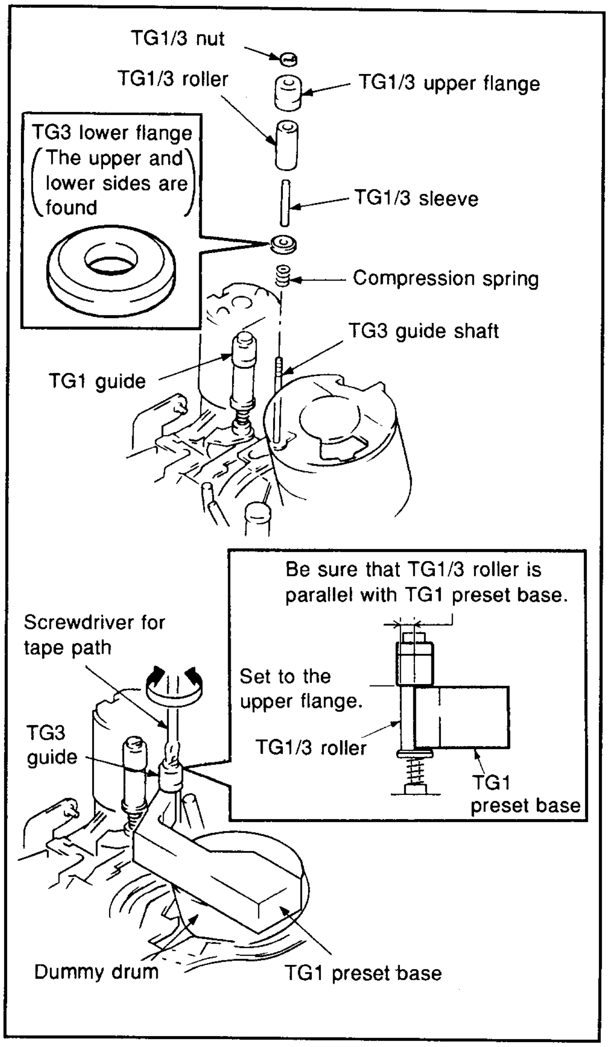
1. Removing

- Remove the TG1/3 nut with a screwdriver for tape path (Ref No.J-16), then remove in the order of TG1/3 upper flange, TG1/3 roller, TG1/3 sleeve, TG3 lower flange and compression spring.

2. Attaching

1) Attach in the order of compression spring, TG3 lower flange, TG1/3 sleeve, TG1/3 roller, TG1/3 upper flange and TG1/3 nut.
2) Refer to 3-1. to remove the drum assembly and attach the dummy drum (Ref No. J-11).
3) Put the TG1 preset base (Ref No.J-12) on the dummy drum, adjust the TG1/3 nut with a screwdriver for tape path (Ref No. J-16) to meet the TG1/3 upper flange and a jig.
4) Refer to 3-1. to attach the drum assembly after removing each jig.
5) Refer to 2-2. to clean the TG3 guide.
6) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)

Note: If the TG3 guide shaft is damaged, it will be necessary to replace the mechanical chassis block assembly. (Refer to "5. EXPLODED VIEWS".)


TG1/3 nut
TG1/3 roller
TG1/3 upper flange
TG3 lower flange
(The upper and lower sides are found)
TG1/3 sleeve
Compression spring
TG3 guide shaft
TG1 guide
Be sure that TG1/3 roller is parallel with TG1 preset base.
Screwdriver for tape path
Set to the upper flange.
TG1/3 roller
TG3 guide
TG1 preset base
Dummy drum
TG1 preset base

3-5. TG7 GUIDE

1. Removing

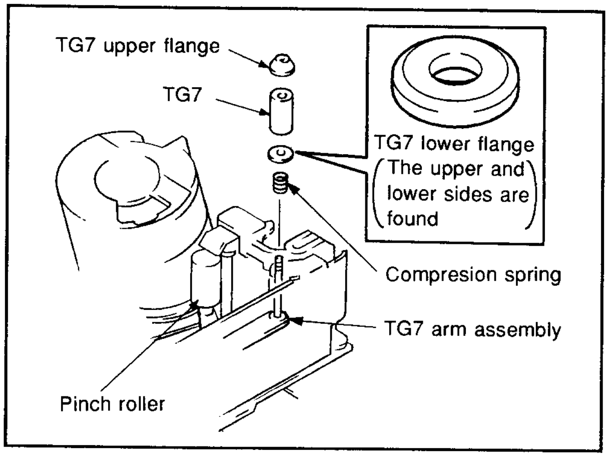
- Remove the TG7 upper flange with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG7, TG7 lower flange and compression spring.

2. Attaching

1) Attach in the order of compression spring, TG7 lower flange, TG7 and TG7 upper flange.

Note: Fix temporarily not to come out the TG7 guide shaft from the TG7 upper flange.

2) Refer to 2-2. to clean the TG7 guide.
3) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)


TG7 upper flange
TG7
TG7 lower flange
(The upper and lower sides are found)
Compresion spring
TG7 arm assembly
Pinch roller

3-6. S POSITIONING AND T POSITIONING

1. Removing

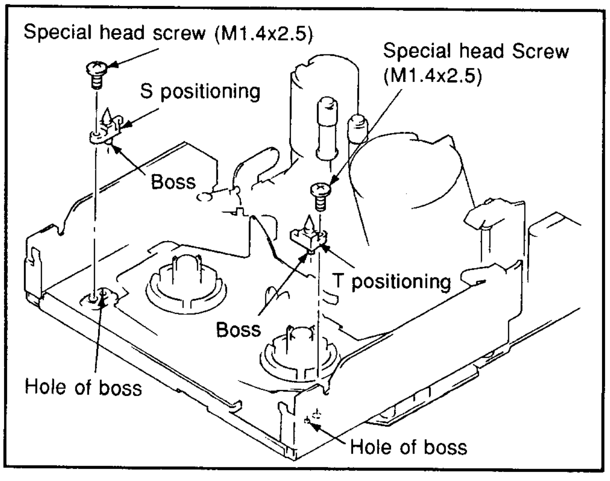
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove each screw, then remove the S positioning and T positioning.

2. Attaching

1) Attach the S positioning and T positioning with screws.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)

Note: Pay attention to adjust the position of each positioning and side S or T.

2) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw (M1.4x2.5)
Special head Screw (M1.4x2.5)
S positioning
Boss
T positioning
Boss
Hole of boss
Hole of boss

3-7. LOCK LEVER AND SLIDER FOLLOWER

1. Removing

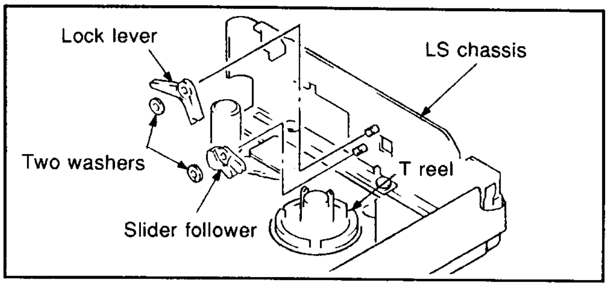
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove each washer, then remove in the order of lock lever and slider follower.

2. Attaching

1) Attach in order of slider follower and lock lever with washers.

Note: Pay attention to the direction and attaching position of lock lever and slider follower.

2) Refer to 1-1. to attach the cassette compartment assembly.


Lock lever
LS chassis
Two washers
T reel
Slider follower

3-8. LM MOTOR ASSEMBLY

1. Removing

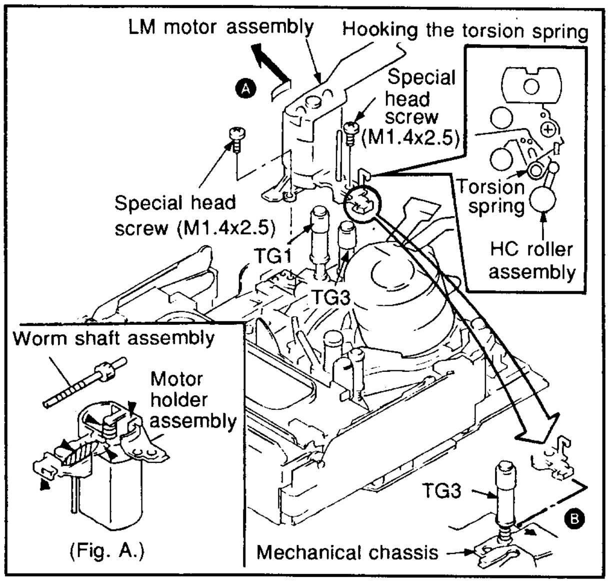
1) Set the LE—STOP mode.
2) Remove the two of screws to remove the LM motor assembly in the direction of arrow Ⓐ.

2. Attaching

1) Set the LE—STOP mode.
2) Attach the LM motor assembly with the two of screws in the direction of arrow Ⓑ.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
3) Hook the torsion spring of HC roller assembly.

<Note for replacement of the warm shaft assembly>

- Apply the grease which is applied to the warm shaft assembly before replacement to ► (Fig. A) of the motor holder assembly.


LM motor assembly
Hooking the torsion spring
Ⓐ
Special head screw (M1.4x2.5)
Special head screw (M1.4x2.5)
Torsion spring
HC roller assembly
TG1
TG3
Worm shaft assembly
Motor holder assembly
(Fig. A.)
TG3
Ⓑ
Mechanical chassis

3-9. CAPSTAN MOTOR

There is an axis compensating spacer between the capstan motor and mechanical chassis for this mechanical deck. It is necessary to remember the attached position (one of ⓐ or ⓑ) and thickness (normal: 100μm) when removing the capstan motor because the set has its own attaching position and thickness.

1. Removing

1) Set the D. ON—EJ mode.
2) Remove the screw ① to remove the FPC holder.
3) Remove the two of screw ② to remove the capstan motor.

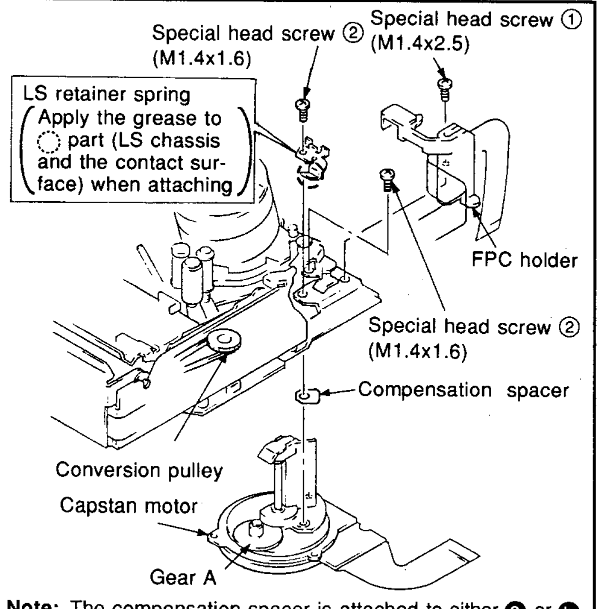
Note: Not to lose the compensating spacer. Be sure to remember the attaching position and thickness.

2. Attaching

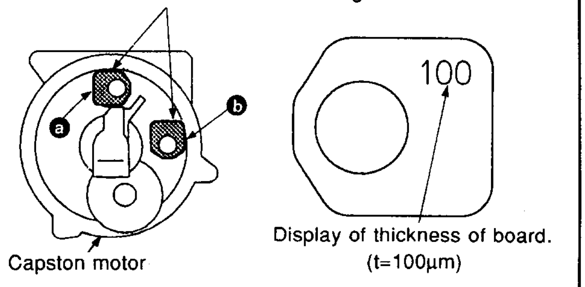
1) Set the D. ON—EJ mode.
2) Put the compensating spacer on the capstan motor.

Note: Be sure to check that it is satisfied the same condition with when removing.

3) Engage the gear A and conversion pulley.
4) Apply the grease (1.5 mm dia.) to the LS retainer spring.
   Grease: Floil Grease (SG-941)
5) Attach the capstan motor with two of screw ②.
   Fixing torque: 0.0981 N • m (1 kg • cm)
6) Attach the FPC holder with a screw ①.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)


Special head screw ② (M1.4x1.6)
Special head screw ① (M1.4x2.5)
LS retainer spring
(Apply the grease to ⁘ part (LS chassis and the contact surface) when attaching)
FPC holder
Special head screw ② (M1.4x1.6)
Compensation spacer
Conversion pulley
Capstan motor
Gear A

Note: The compensation spacer is attached to either ⓐ or ⓑ. Be sure to remember the attachiment position, direction and its thichness when removing.


ⓐ
ⓑ
100
Capston motor
Display of thickness of board. (t=100μm)

3-10. LED BASE ASSEMBLY

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove the LED holder, then remove the LED (FP-242).
3) Remove the screw, then remove the LED base assembly in the direction of arrow.

2. Attaching

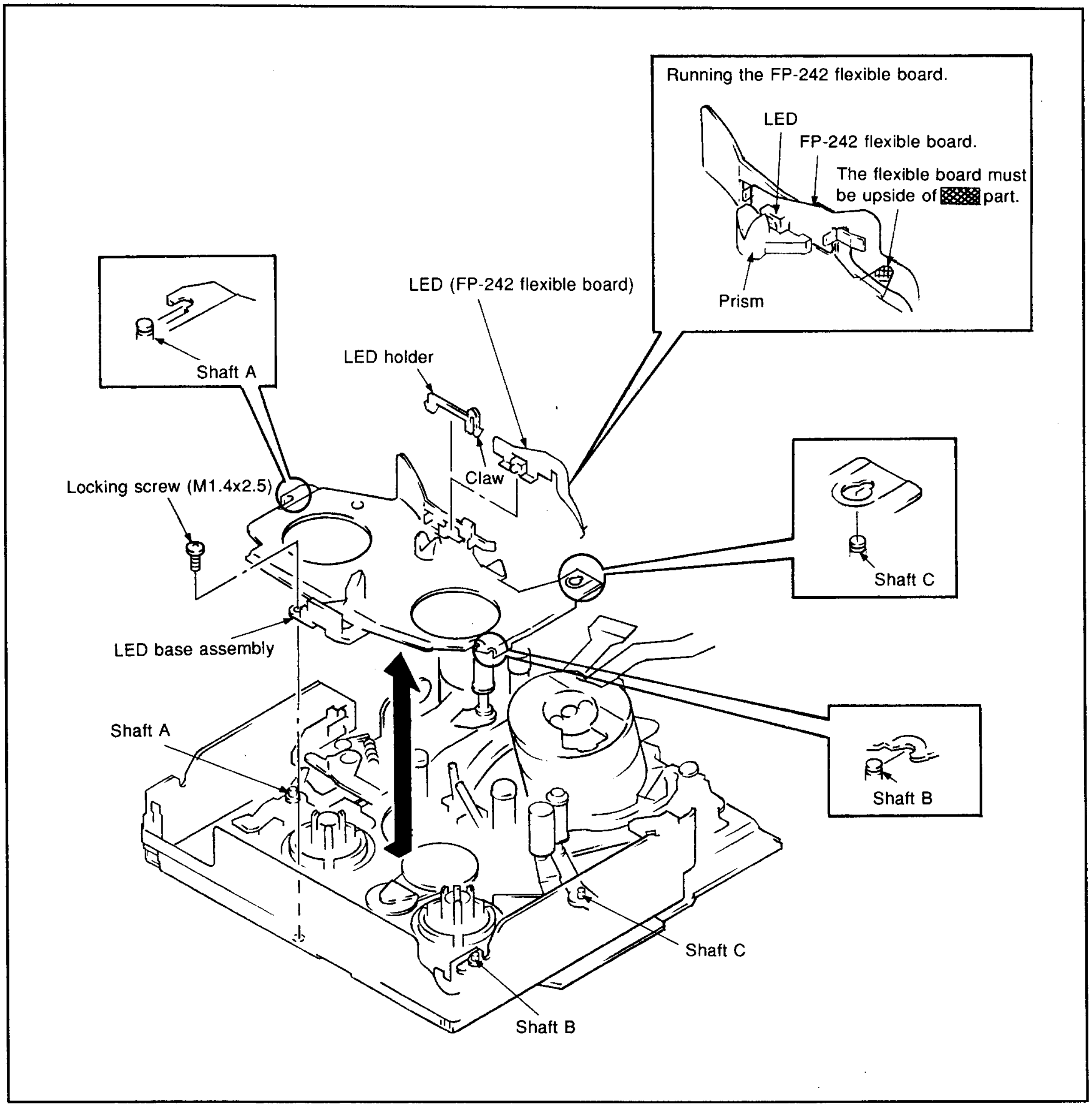
1) Hook the three notches of LED base assembly to each slit on the shaft A, B and C, so that the LED (FP-242) is not inserted.

Note: Pay attention to your fingerprints and scratch.

2) Attach the screw and apply the screw lock (Ref No. J-20).
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
3) Put the LED (FP-242) in the space of prism, then remove the LED holder.

Note: Pay attention to pull around the FP-242.

4) Refer to 1-1. to attach the cassette compartment assembly.


Running the FP-242 flexible board.
LED
FP-242 flexible board.
The flexible board must be upside of ▨ part.
Prism
LED (FP-242 flexible board)
LED holder
Claw
Shaft A
Locking screw (M1.4x2.5)
LED base assembly
Shaft A
Shaft C
Shaft B
Shaft C
Shaft B

3-11. TG7 ARM ASSEMBLY

1. Removing

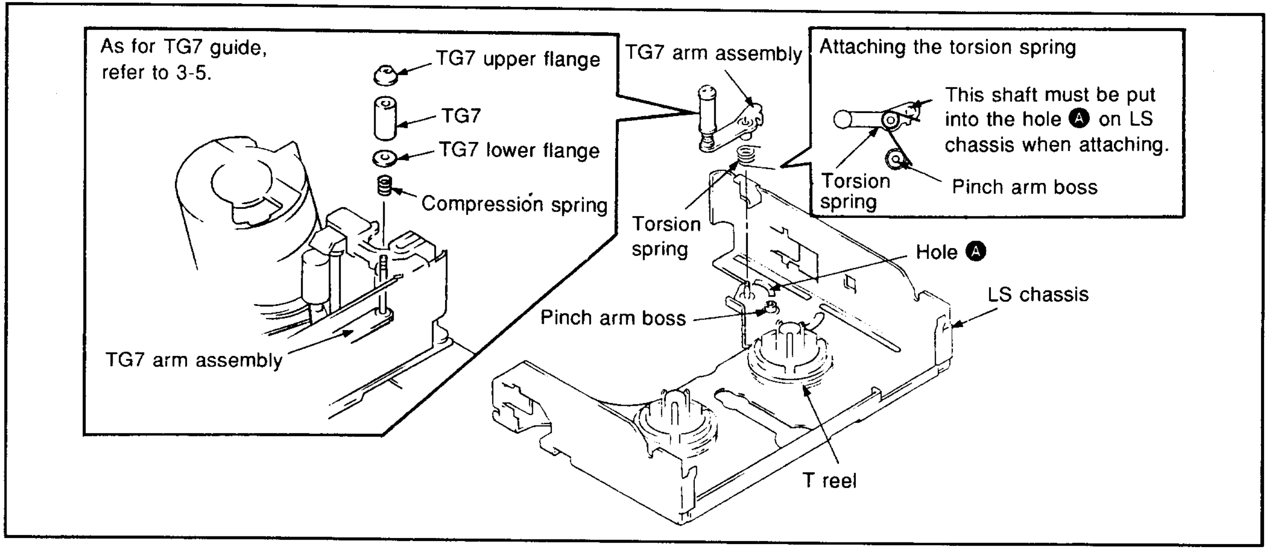
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Set the EJ mode, and remove in order of TG7 arm assembly and torsion spring.
4) Refer to 3-5. to remove the TG7 guide.

2. Attaching

1) Set the EJ mode.
2) Refer to 3-5. to attach the TG7 guide.
3) Attach in the order of torsion spring and TG7 arm assembly.

Note: Pay attention to attach the torsion spring.

4) Refer to 3-10. to attach the LED base assembly.
5) Refer to 1-1. to attach the cassette compartment assembly.
6) Refer to 2-2. to clean the TG7 guide.
7) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)


As for TG7 guide, refer to 3-5.
TG7 upper flange
TG7
TG7 lower flange
Compression spring
TG7 arm assembly
TG7 arm assembly
Torsion spring
Pinch arm boss
Attaching the torsion spring
This shaft must be put into the hole Ⓐ on LS chassis when attaching.
Torsion spring
Pinch arm boss
Hole Ⓐ
LS chassis
T reel

3-12. PINCH ARM ASSEMBLY

Note: When the pinch arm assembly is replaced, be sure to replace the extension spring together.

1. Removing

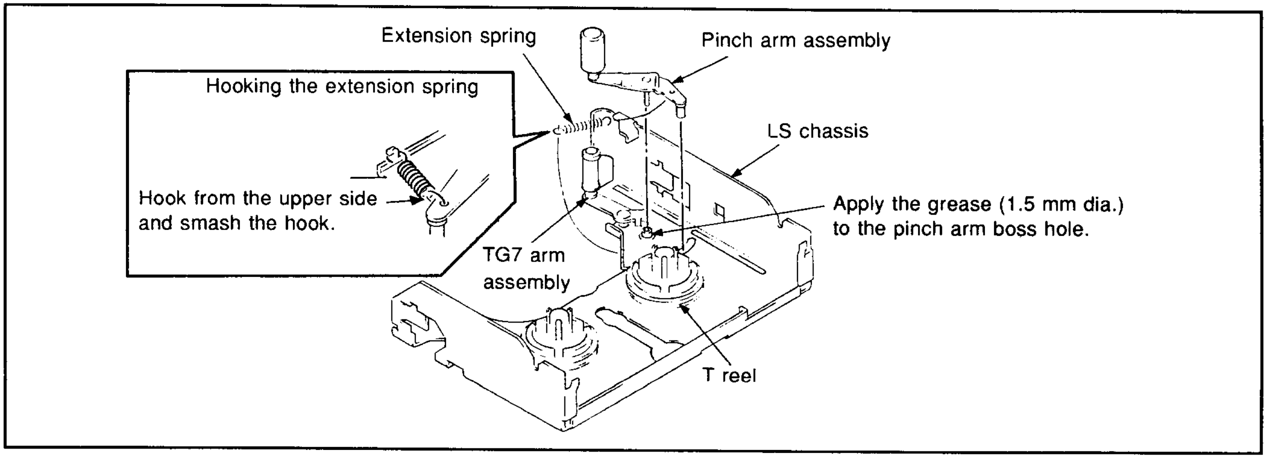
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Set the FF—RVS mode, remove the extension spring from the side of LS chassis, then remove the pinch arm assembly.

2. Attaching

1) Set the FF—RVS mode, apply the grease (1.5 mm dia.) to the pinch arm boss hole, attach the pinch arm assembly and hook the extension spring.
   Grease: Floil Grease (SG-941)

Note: There is a specified direction of the spring hook.

2) Refer to 3-10. to attach the LED base assembly.
3) Refer to 1-1. to attach the cassette compartment assembly.
4) Refer to 2-2. to clean the pinch roller.


Extension spring
Pinch arm assembly
Hooking the extension spring
Hook from the upper side and smash the hook.
LS chassis
Apply the grease (1.5 mm dia.) to the pinch arm boss hole.
TG7 arm assembly
T reel

3-13. T HARD BREAK, S BREAK ARM AND S HARD

1. Removing

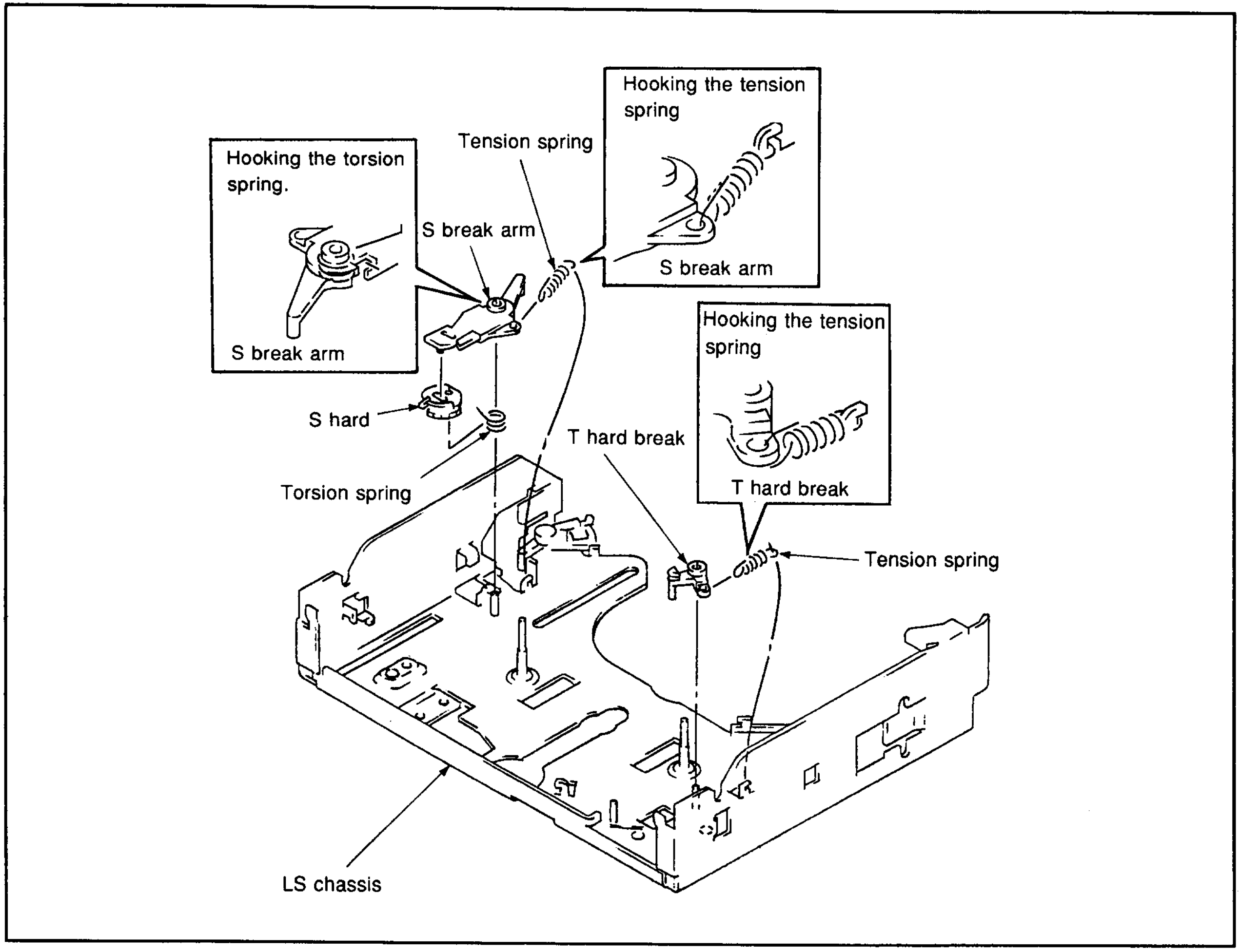
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the tension spring from the side of LS chassis, then remove the T hard break, S break arm, torsion spring and S hard.

2. Attaching

1) Attach the S hard and torsion spring to the S break arm.

Note: Pay attention to attach the spring and S hard, and the hooking position of spring.

2) Hook each tension spring to the T hard break and S break arm, then attach each break to the LS chassis.
3) Hook the tension spring to the side of LS chassis.
4) Refer to 3-12. to attach the LED base assembly.
5) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the tension spring
Hooking the torsion spring.
Tension spring
S break arm
S break arm
S break arm
Hooking the tension spring
S hard
T hard break
Torsion spring
T hard break
Tension spring
LS chassis

3-14. RVS BREAK AND LS CAM PLATE

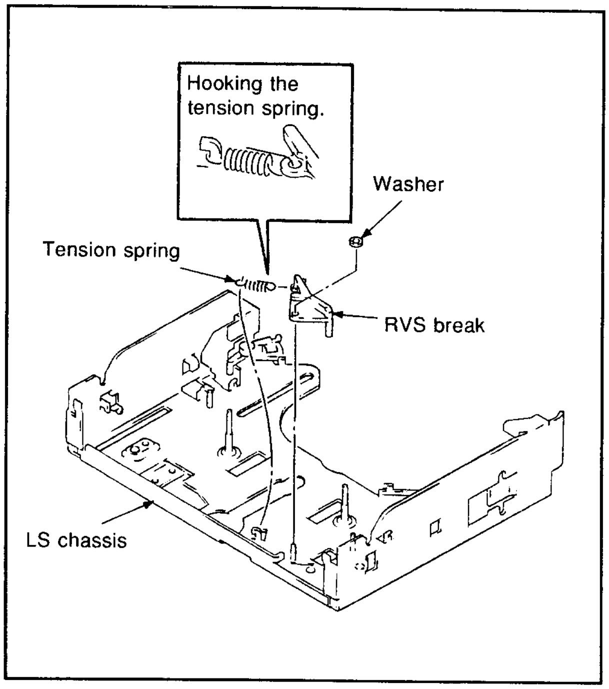
[RVS BREAK]

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) After the washer is removed, remove the tension spring from the side of LS chassis, then remove the RVS break.

2. Attaching

1) Hook the tension spring to RVS break.
   (There is a specified spring hook direction.)
2) Attach the RVS break with a washer to the LS chassis and hook the tension spring.
3) Refer to 3-10. to attach the LED base assembly.
4) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the tension spring.
Washer
Tension spring
RVS break
LS chassis

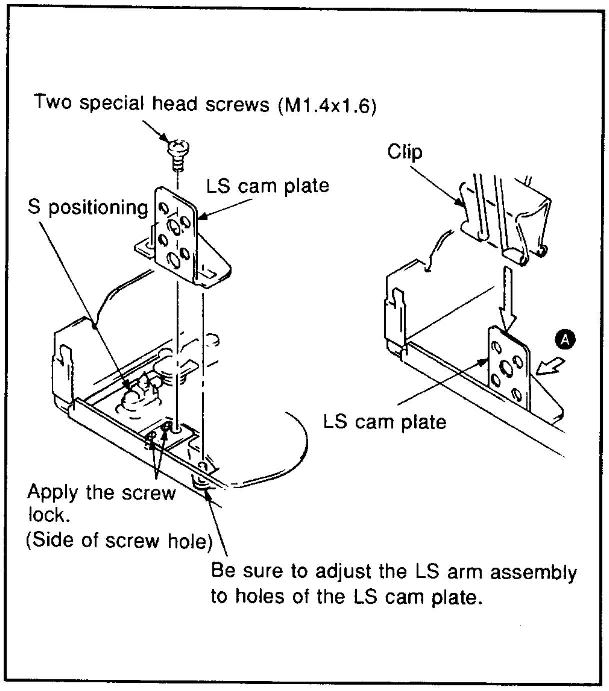
[LS CAM PLATE]

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the two screws and remove the LS cam plate.

2. Attaching

1) Apply the lock screw (Ref No. J-20) (two positions), then fix the LS cam plate temporarily with two screws.
2) Set the RP mode, loosen the two screws, press in the direction of arrow Ⓐ, clasp the LS cam plate and LS chassis with a clip etc., and fasten the screws tightly.
   Fixing torque: 0.0981 N • m (1 kg • cm)
3) Refer to 3-10. to attach the LED base assembly.
4) Refer to 1-1. to attach the cassette compartment assembly.


Two special head screws (M1.4x1.6)
Clip
LS cam plate
S positioning
Ⓐ
LS cam plate
Apply the screw lock.
(Side of screw hole)
Be sure to adjust the LS arm assembly to holes of the LS cam plate.

3-15. TG7 ARM BLOCK ASSEMBLY AND TENSION REGULATOR BAND ASSEMBLY

When the TG7 arm block assembly is replaced, be sure to replace the extension spring together.

1. Removing

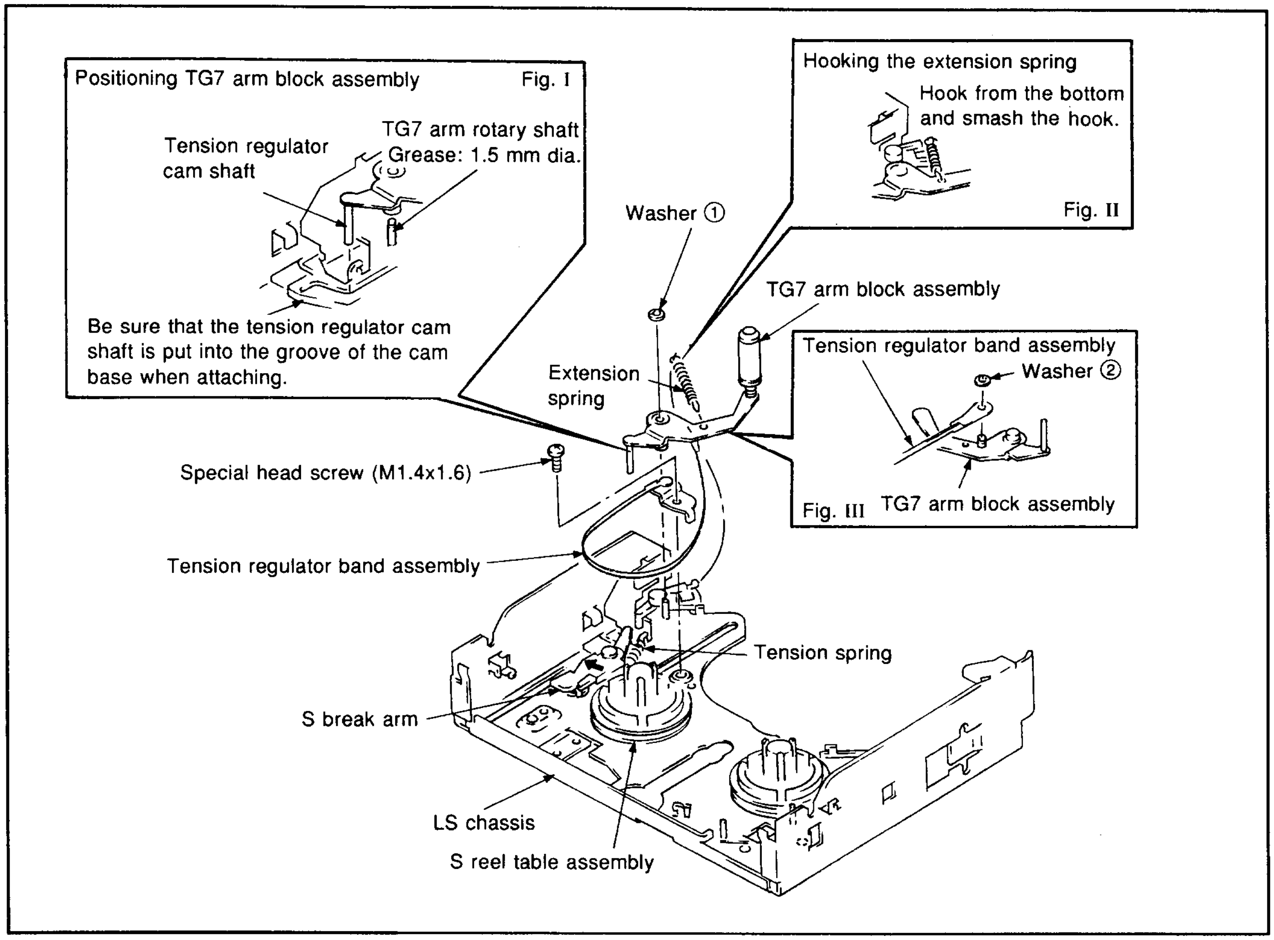
1) Refer to 1-1 to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Set the D. ON mode and check that the tension regulator band assembly is loose.
4) Remove the tension spring of S break arm (LS chassis side only), and keep away in the direction of arrow.
5) Remove the extension spring and a screw from the side of LS chassis, then remove the tension regulator band assembly.
6) Remove the washer ①, and remove the TG7 arm block assembly with the tension regulator band assembly together.
7) Remove the washer ②, and remove the tension regulator band assembly.
   (Refer to the figure III.)

2. Attaching

1) Attach the tension regulator band assembly to the TG7 arm block assembly with the washer ②. And attach the extension spring to the arm block. (Refer to the figure II.)
   Grease: Floil Grease (SG-941)

Note: There is a specified direction of the spring hook.

2) Set the D. ON mode, apply the grease (1.5 mm dia.) to the TG7 arm rotary shaft, then attach the TG7 arm block assembly to fit the groove of cam base and hook the extension spring. (Refer to the figure I.)
   Grease: Floil Grease (SG-941)
3) Attach the washer ①.
4) Check the S break arm is slid in the direction of arrow, wind the tension regulator band to the S reel table assembly, then fix the tension regulator band assembly temporarily putting it to the side of S reel table assembly.
5) Hook the tension spring of S break arm to the LS chassis.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.
8) Refer to 3-16. to adjust the position of FWD.
9) Refer to 3-17. to adjust the FWD back tension.
10) Refer to 3-18. to check the (RVS) torque on the reel table.


Positioning TG7 arm block assembly
Fig. I
TG7 arm rotary shaft
Grease: 1.5 mm dia.
Tension regulator cam shaft
Be sure that the tension regulator cam shaft is put into the groove of the cam base when attaching.
Hooking the extension spring
Hook from the bottom and smash the hook.
Fig. II
Washer ①
TG7 arm block assembly
Tension regulator band assembly
Washer ②
Fig. III
TG7 arm block assembly
Extension spring
Special head screw (M1.4x1.6)
Tension regulator band assembly
Tension spring
S break arm
LS chassis
S reel table assembly

3-16. FWD POSITION ADJUSTMENT

Adjust the following items for replacement of the TG7 arm, tension regulator band, S reel table and others or removing parts of these.

- FWD position adjustment
- FWD back tension adjustment (Refer to 3-17.)
- Reel table (RVS) torque check (Refer to 3-18.)

• Adjusting

1) Set the $\boxed{\text{R/P}}$ mode, and check the position of TG2 guide.

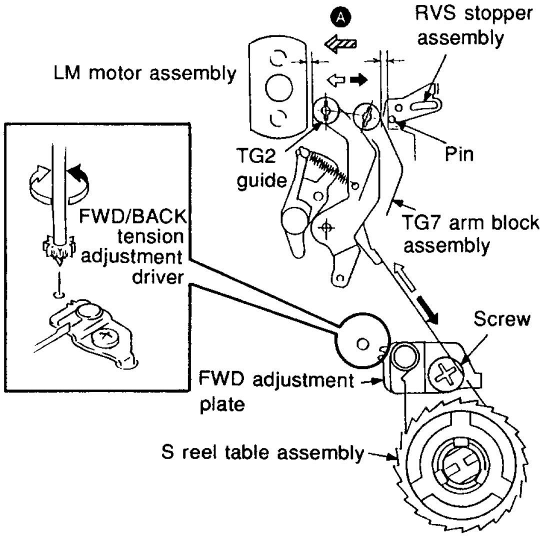
- Make sure the space between TG2 guide and LM motor assembly and the space between TG2 guide and RVS stopper assembly's pin are equal (not to be hit to the guide and TG7 arm.).

2) Loosen the screw and move the TG2 guide with your fingers. Adjust the FWD adjustment plate with a FWD/BACK tension adjustment driver (Ref No. J-21), then fasten the screw tightly.

Fixing torque: 0.0588 N • m (0.6 kg • cm)

Note: Make sure there is enough space to move the TG2 in the direction of arrow Ⓐ.

- When the space on the LM motor assembly is small, turn the FWD/BACK tension adjustment driver in the direction of ➡.
- When the space on the RVS stopper assembly is small, turn the FWD/BACK tension adjustment driver in the direction of ⇨.


Ⓐ
RVS stopper assembly
LM motor assembly
TG2 guide
Pin
FWD/BACK tension adjustment driver
TG7 arm block assembly
Screw
FWD adjustment plate
S reel table assembly

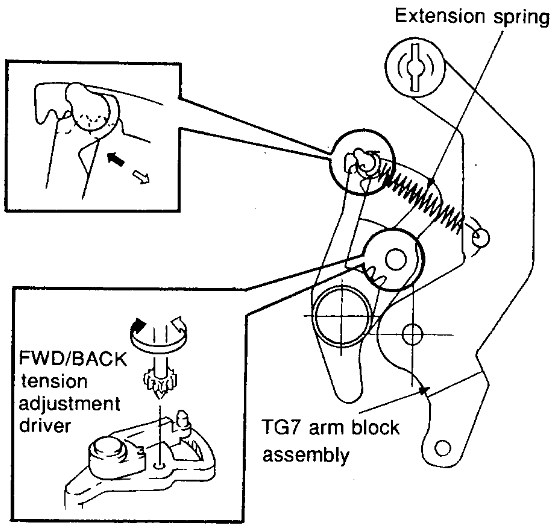
3-17. FWD BACK TENSION ADJUSTMENT

1. Adjusting

1) Set the FWD back tension cassette (Ref No. J-8).
2) Set the $\boxed{\text{REC}}$ mode, then check that the reading of S side is 0.417 to 0.490 mN • m (4.25 to 5 g • cm) and the change is lower than 0.0490 mN • m (0.5 g • cm). If the reading is not satisfied the specification, adjust the followings.

- If the reading is higher than the specification (weaken the tension of spring)
  Turn the adjusting screwdriver counterclockwise to satisfy the specification.
- If the reading is lower than the specification (strengthen the tension of spring)
  Turn the adjusting screwdriver clockwise to satisfy the specification.

Note: When the FWD/BACK tension adjustment driver is turned, take out the torque cassette once.


Extension spring
FWD/BACK tension adjustment driver
TG7 arm block assembly

- When the reading is more than the standard value, turn the FWD/BACK tension adjustment driver in the direction of ⇨.
- When the reading is less than the standard value, turn the FWD/BACK tension adjustment driver in the direction of ➡.

3-18. REEL TABLE TORQUE CHECK

- **Adjusting**

[FWD torque]

1) Set the FWD torque cassette (Ref No. J-7).
2) Set the FWD mode, then check that the torque value of the T reel table is 0.5393 to 1.258 mN • m (5.5 to 12.5 g • cm) at the center value of deflection and the change is 0.0981 mN • m (1.0 g • cm).

[RVS torque]

1) Set the RVS torque cassette (Ref No. J-6).
2) Set the RVS mode (by using EDIT SEARCH (–) button), then check that the torque value of the S reel table is 1.0787 to 1.9613 mN • m (11.0 to 20.0 g • cm) at the center value of deflection. **Note 1**

If the above values are not satisfied, check the position of FWD (tension regulator). Replace each reel table if there is no abnormal.

Note 1: Some speed of EDIT SEARCH is changed by double step due to strength of pressing. Select Normal speed (same as FWD) for the torque check.

3-19. T REEL TABLE ASSEMBLY

1. Removing

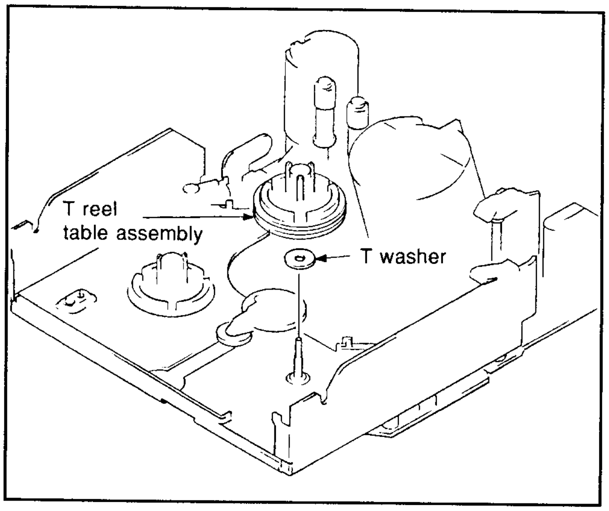
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the T reel table assembly and T washer.

2. Attaching

1) Attach in the order of T washer and T reel table assembly.

Note: For attaching the T reel table assembly, perform "3-21. HEIGHT ADJUSTMENT FOR EACH REEL TABLE".

2) Refer to 3-10. to attach the LED base assembly.
3) Refer to 1-1. to attach the cassette compartment assembly.
4) Refer to 3-18. to check the torque of the reel table.



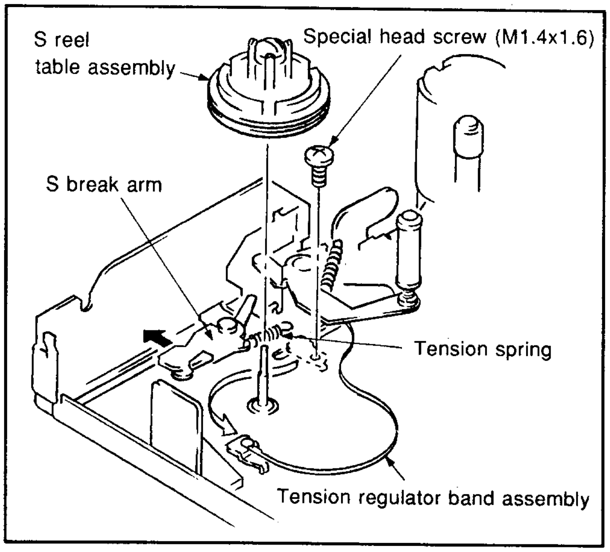
3-20. S REEL TABLE ASSEMBLY

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the tension spring of the S break arm (LS chassis side only), and keep away in the direction of arrow.
4) Remove the screw and the tension regulator band assembly, then remove the S reel table assembly.

2. Attaching

1) Attach the S reel table assembly.
2) Set the [D. ON] mode, fix the tension regulator band assembly temporarily, and hook the tension spring. (There is a specified spring direction. (Refer to 3-13.))
3) Refer to 3-21. to adjust the height and tilt of each reel table.
4) Refer to 3-10. to attach the LED base assembly.
5) Refer to 1-1. to attach the cassette compartment assembly.
6) Refer to 3-16 to adjust the position of FWD.
7) Refer to 3-17. to adjust the FWD back tension.
8) Refer to 3-18. to check the reel's torque.


S reel table assembly
Special head screw (M1.4x1.6)
S break arm
Tension spring
Tension regulator band assembly

3-21. HEIGHT ADJUSTMENT FOR EACH REEL TABLE

Note: In either case one side of reel table adjustment is aimed, adjust both sides of reel table.

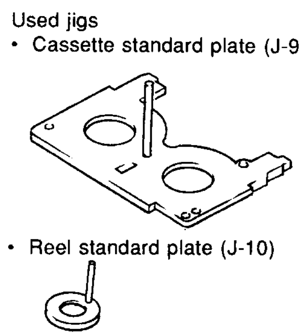
- **Adjusting**

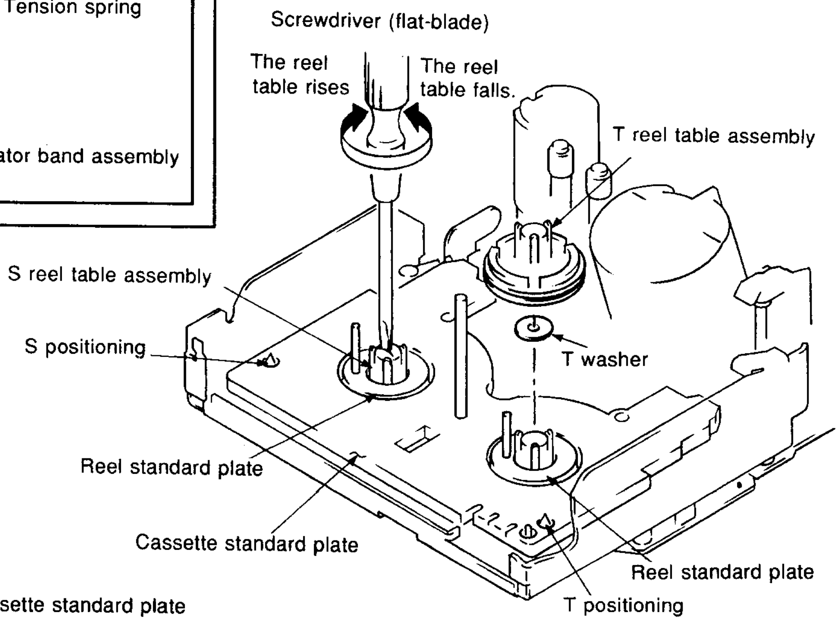
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Set the [R/P] mode. Put the cassette standard plate (Ref No. J-9), turn the S reel table counterclockwise with a screwdriver (flat blade) to let down the reel table, and check that the cassette standard plate is not unstable. Be sure to remove the T reel table then.
3) Put the reel standard plate (Ref No. J-10) to adjust the S reel table with a screwdriver (flat blade), then adjust the height of the cassette standard plate and reel standard plate. (Height: ±0.1 mm, tilt: should be parallel)
4) Adjust the S reel table. Attach in the order of T reel table, cassette standard plate and reel standard plate to adjust the height and azimuth.
(Height: ±0.1 mm, tilt: should be parallel)

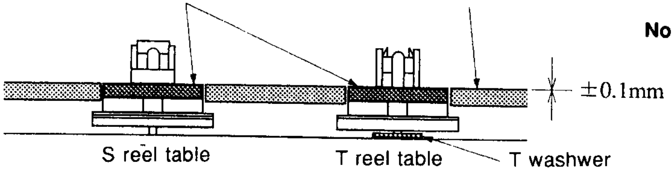
- If not satisfied the specification, replace the T washer. (T reel side only)
  Yellow: 0.1 mm
  Green: 0.25 mm
  Black: 0.35 mm

5) Refer to 3-10. to attach the LED base assembly.
6) Refer to 1-1. to attach the cassette compartment assembly.

Used jigs
- Cassette standard plate (J-9)
- Reel standard plate (J-10)




Screwdriver (flat-blade)
The reel table rises
The reel table falls.
T reel table assembly
S reel table assembly
S positioning
T washer
Reel standard plate
Cassette standard plate
Reel standard plate
T positioning


Reel standard plate
Cassette standard plate
±0.1mm
S reel table
T reel table
T washwer

Note: When the T washer is replaced, remove the cassette standard plate each time for attachment.

3-22. LS CHASSIS BLOCK ASSEMBLY, GOOSENECK ASSEMBLY, RELAY GEAR, LOCK SLIDER, COMPULSION ARM ASSEMBLY, CAM SLIDER AND PINCH RELEASE ARM

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the screw ① and remove the FPC holder.
4) Set the $\boxed{\text{S. OFF}}$ mode.
5) Remove the washer to remove the gooseneck assembly and relay gear.
6) Remove the tension spring on the side of LS chassis and remove the lock slider in the direction of arrow.
7) Set the $\boxed{\text{D. ON}}$ mode, remove the two of screw ②, then set the $\boxed{\text{S. OFF}}$ mode.

Note: Do not remove the cam slider from the LS chassis except the replacement.

8) Remove the two of screw ③ and remove the LS chassis block assembly.

Note: When removing the LS chassis block assembly, remove it pressing the TG7 arm block assembly not to give a shock to the tension regulator band. (Remove it pressing the pinch arm as well.)

9) Remove the compulsion arm assembly and pinch release arm.

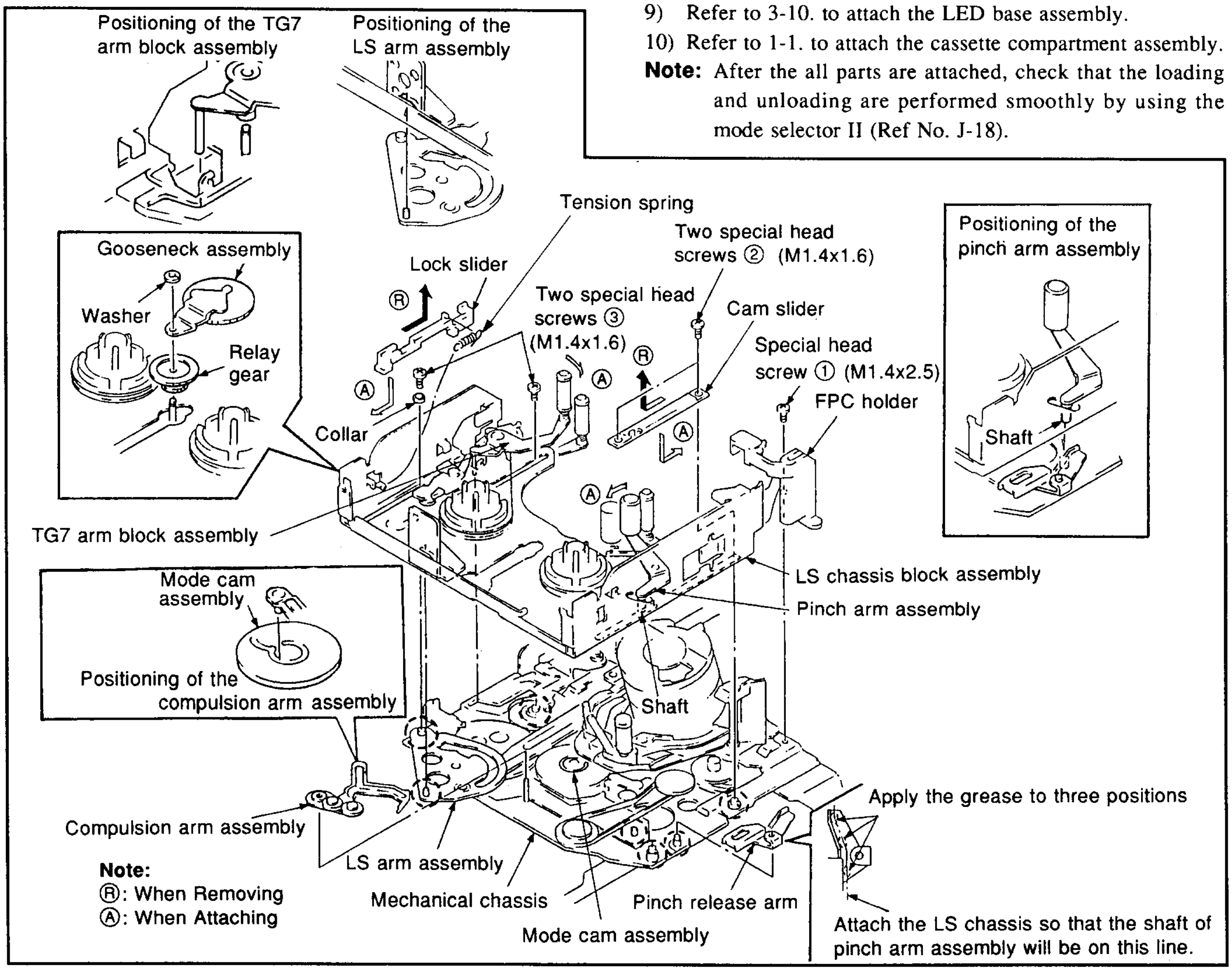
2. Attaching

1) Set the $\boxed{\text{S. OFF}}$ mode.
2) Apply the grease (seven positions, 3 mm dia.) to the mechanical chassis and LS arm assembly.
   Grease: Floil Grease (SG-941)
3) Attach the compulsion arm assembly and pinch release arm.
4) Apply the grease (three positions, 3 mm dia.) to the pinch release arm, then put the LS chassis block assembly.

Note: Pay attention to adjust each position of the LS arm assembly, TG7 arm block assembly and pinch arm assembly.

5) Attach in the order of two of screw ③ (do not forget to put in the collar), lock slider and tension spring.
   Fixing torque: 0.0981 N • m (1 kg • cm)
6) Set the $\boxed{\text{D. ON}}$ mode, attach the cam slider (pay attention to the direction for attaching) and two of screw ②.
   Fixing torque: 0.0981 N • m (1 kg • cm)
7) Attach the gooseneck assembly with a relay gear and a washer.
8) Attach the FPC holder with a screw ①.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
9) Refer to 3-10. to attach the LED base assembly.
10) Refer to 1-1. to attach the cassette compartment assembly.

Note: After the all parts are attached, check that the loading and unloading are performed smoothly by using the mode selector II (Ref No. J-18).


Positioning of the TG7 arm block assembly
Positioning of the LS arm assembly
Gooseneck assembly
Washer
Relay gear
Tension spring
Lock slider
Two special head screws ② (M1.4x1.6)
Two special head screws ③ (M1.4x1.6)
Cam slider
Special head screw ① (M1.4x2.5)
FPC holder
Positioning of the pinch arm assembly
Shaft
Ⓡ
Ⓐ
Collar
TG7 arm block assembly
LS chassis block assembly
Pinch arm assembly
Mode cam assembly
Positioning of the compulsion arm assembly
Shaft
Apply the grease to three positions
Compulsion arm assembly
LS arm assembly
Mechanical chassis
Pinch release arm
Mode cam assembly
Attach the LS chassis so that the shaft of pinch arm assembly will be on this line.
Note:
Ⓡ: When Removing
Ⓐ: When Attaching

3-23. GL (S) BLOCK ASEMBLY (COASTER (S) ASSEMBLY, GL (S) ASSEMBLY AND RAIL (S))

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
4) Refer to 3-1. to remove the drum assembly.
5) Set the STOP—RVS mode.
6) Remove the screw, pick up the ◌ part, slide the rail (S) in the direction of arrow Ⓐ, and set the D. ON mode.

Note: Check that the coaster (S) assembly is removed from the rail of mechanical chassis then.

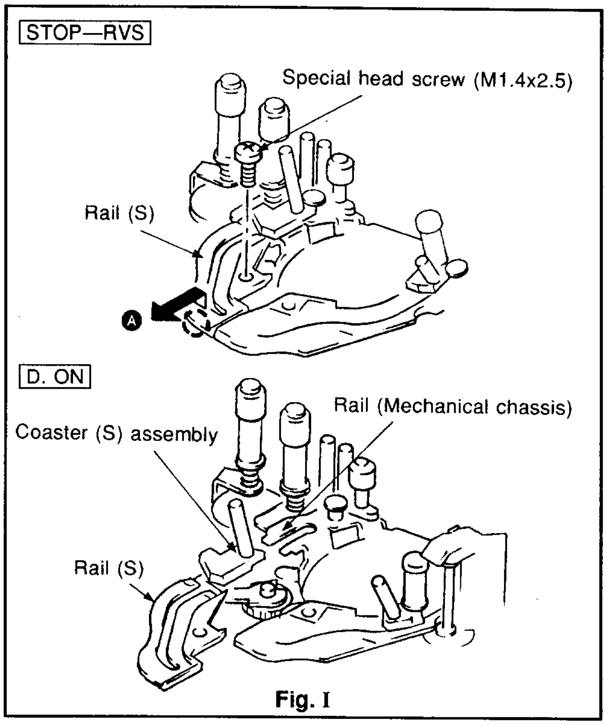
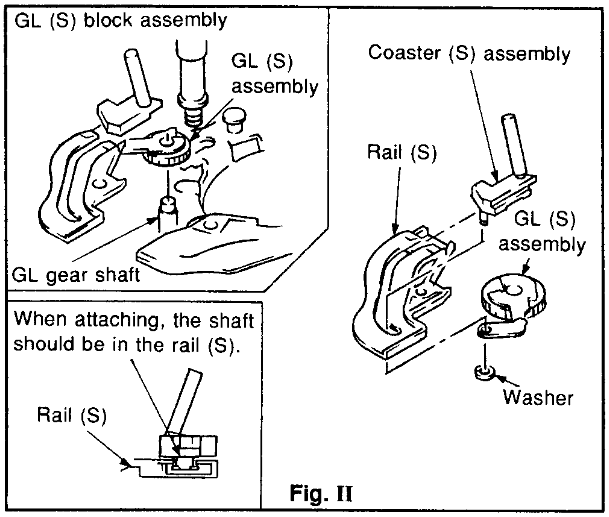

STOP—RVS
Special head screw (M1.4x2.5)
Rail (S)
Ⓐ
D. ON
Rail (Mechanical chassis)
Coaster (S) assembly
Rail (S)

Fig. I

7) Pick up and remove the GL (S) assembly.
8) Remove the washer and remove each parts.


GL (S) block assembly
GL (S) assembly
GL gear shaft
Coaster (S) assembly
Rail (S)
GL (S) assembly
Washer
Rail (S)

When attaching, the shaft should be in the rail (S).

Fig. II

2. Attaching

1) Attach the coaster (S) assembly to the rail (S), then attach the GL (S) assembly. (Refer to the figure II)

Note: Pay attention to the direction of each parts' attachment.

2) Set the S. OFF mode.

Note: The S. OFF mode is the condition that all phase are matched as far as it is not abnormal. If there is a difference of phase, refer to "3-30. EACH GEAR AND MODE CAM ASSEMBLY PHASE ADJUSTMENT" to adjust the phase.

3) Apply the grease (1.5 mm dia.) to the GL gear shaft and attach the GL (S) assembly so that the each phase meets the LS arm assembly and GL (T) assembly.
   Grease: Floil Grease (SG-941)

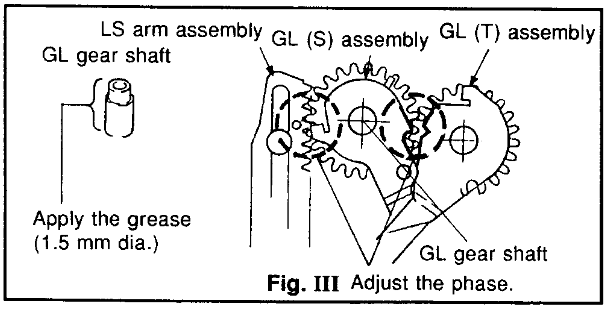

LS arm assembly
GL gear shaft
GL (S) assembly
GL (T) assembly
Apply the grease
(1.5 mm dia.)
GL gear shaft

Fig. III Adjust the phase.

4) Put the coaster (S) assembly to the rail of mechanical chassis by using the mode selector II (Ref No. J-18).

Note: Press the mode selector's button by instalments adjusting the direction of the coaster (S) assembly.
Mode display: S. OFF — STOP—RVS

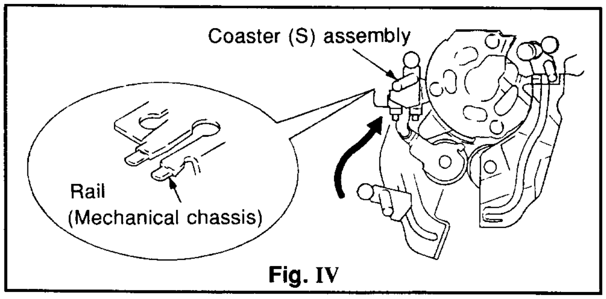

Coaster (S) assembly
Rail
(Mechanical chassis)

Fig. IV

5) Attach the rail (S) to the rail of mechanical chassis and GL gear shaft in order, and fasten the screw.
   Fixing torque: 0.00588 N • m (0.6 kg • cm)

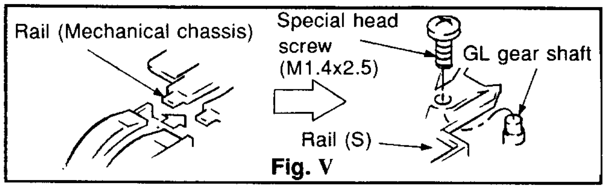

Rail (Mechanical chassis)
Special head screw
(M1.4x2.5)
GL gear shaft
Rail (S)

Fig. V

6) Refer to 3-1. to attach the drum assembly.
7) Refer to 3-22. to attach the gooseneck assembly and LS chassis block assembly.
8) Refer to 3-10. to attach the LED base assembly.
9) Refer to 1-1. to attach the cassette compartment assembly.

3-24. GL (T) BLOCK ASSEMBLY (COASTER (T) ASSEMBLY, GL (T) ASSEMBLY, RAIL (T) AND TG5 ASSEMBLY)

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
4) Refer to 3-9. to remove the capstan motor.
5) Refer to 3-1. to remove the drum assembly.
6) Set the STOP—RVS mode.
7) Remove the screw ①, pick up the ◌ part, remove the rail (T) in the direction of arrow Ⓐ, then set the D. ON mode.

Note: Check that the coaster (T) assembly is removed from the rail of mechanical chassis then.

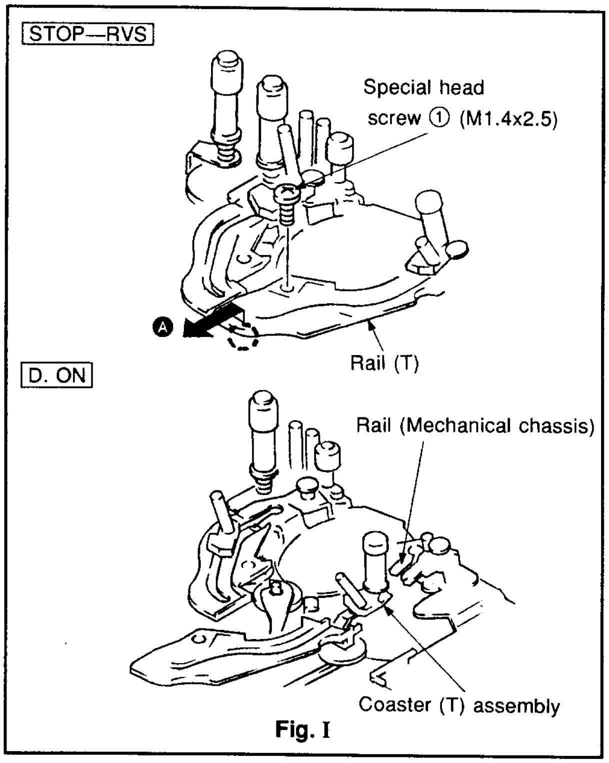
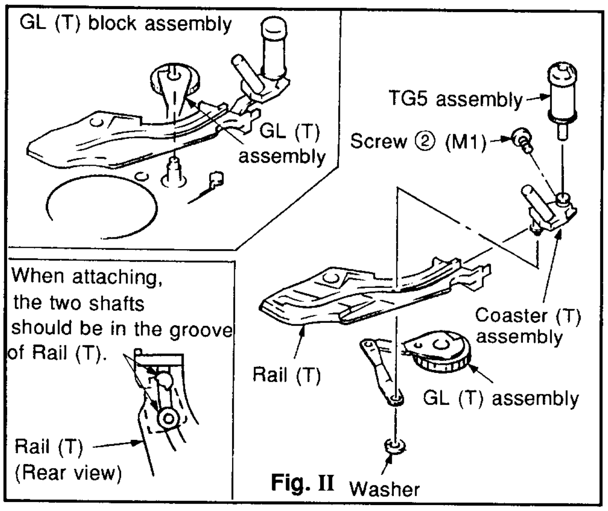

STOP—RVS
Special head screw ① (M1.4x2.5)
Ⓐ
Rail (T)
D. ON
Rail (Mechanical chassis)
Coaster (T) assembly

Fig. I

8) Pick up the GL (T) assembly with a pair of tweezers (a pincette) and remove.
9) Remove a washer and a screw ②, then remove each parts.


GL (T) block assembly
GL (T) assembly
TG5 assembly
Screw ② (M1)
Rail (T)
(Rear view)
Rail (T)
Coaster (T) assembly
GL (T) assembly
Washer

When attaching, the two shafts should be in the groove of Rail (T).

Fig. II

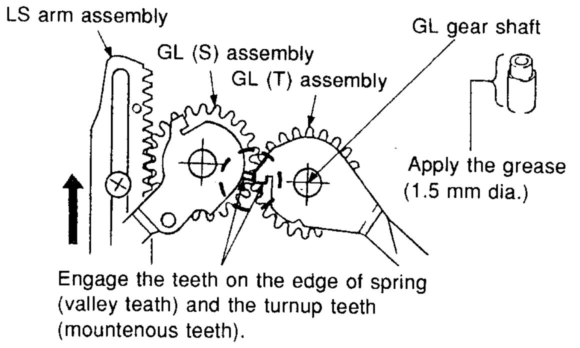
2. Attaching

1) Fix temporarily the TG5 assembly with a screw ② to the coaster (T) assembly. (Refer to the figure II)
   Fixing torque: 0.0490 N • m (0.5 kg • cm)
2) Attach the coaster (T) assembly to the rail (T), then attach the GL (T) assembly. (Refer to the figure II)

Note: Pay attention to the direction of each parts' attachment.

3) Apply the grease (1.5 mm dia.) to the GL gear shaft and attach the GL (T) assembly so that the each phase meets the GL (S) assembly.

Note: After the attachment, set the S. OFF mode to check the phase.


LS arm assembly
GL (S) assembly
GL (T) assembly
GL gear shaft

Apply the grease (1.5 mm dia.)

Engage the teeth on the edge of spring (valley teath) and the turnup teeth (mountenous teeth).

Fig. III

4) Put the coaster (T) assembly into the rail of mechanical chassis by using the mode selector II (Ref No. J-18).

Note: Press the mode selector's button by instalments adjusting the direction of the coaster (T) assembly.
Mode display: S. OFF — STOP—RVS

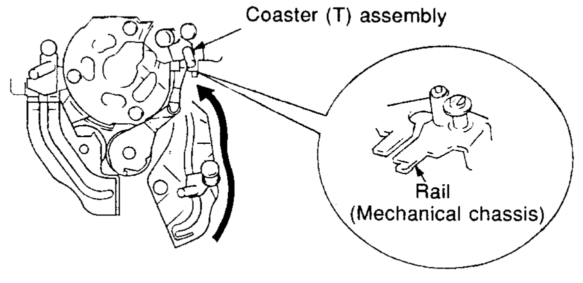

Coaster (T) assembly
Rail
(Mechanical chassis)

Fig. IV

5) Attach the rail (T) to the rail of mechanical chassis and GL gear shaft with a screw ① in order.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)

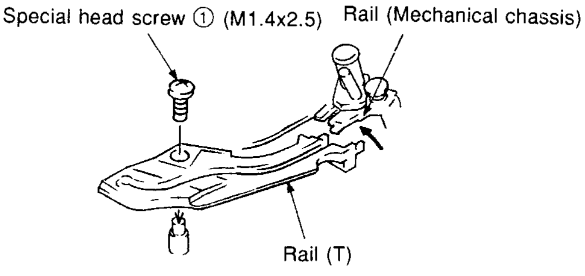

Special head screw ① (M1.4x2.5)
Rail (Mechanical chassis)
Rail (T)

Fig. V

6) Attach the TG5 preset base (Ref No. J-13) and adjust the azimuth and height of the TG5 guide.
   - Azimuth adjustment
     Turn the gate adjustment screw and adjust parallel to jigs.
   - Height adjustment
     Turn the TG5 assembly so that the space between the jig and the TG5 (upper) flange is equal to the space between the jig and the TG5 (lower) flange. (A=B)
7) Rotate the adjustment screw in a 60-degree arc counterclockwise.

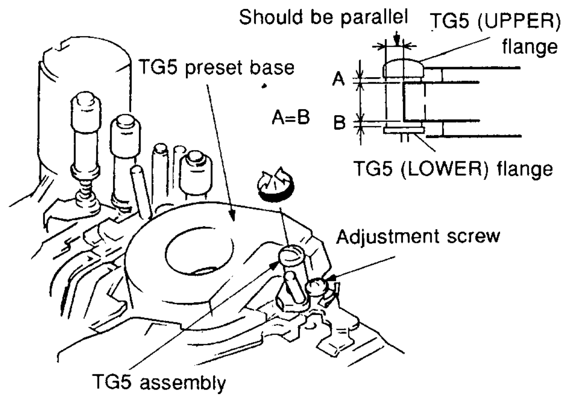

Should be parallel
TG5 (UPPER) flange
TG5 preset base
A=B
A
B
TG5 (LOWER) flange
Adjustment screw
TG5 assembly

Fig. VI

8) Refer to 4-2. to adjust the tracking.
9) Refer to 3-1. to attach the drum assembly.
10) Refer to 3-9. to attach the capstan motor.
11) Refer to 3-22. to attach the gooseneck assembly and LS chassis block assembly.
12) Refer to 3-10. to attach the LED base assembly.
13) Refer to 1-1. to attach the cassette compartment assembly.

3-25. MODE CAM ASSEMBLY AND FP-245 FLEXIBLE BOARD

1. Removing

1) Refer to 1-1 to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and reform arm assembly.
4) Set the $\boxed{\text{STOP—RVS}}$ mode.
5) Remove the screw ① and keep away from the rail (S).
6) Remove a screw ② and two of screw ③, then remove the mode cam assembly and FP-245 flexible board.

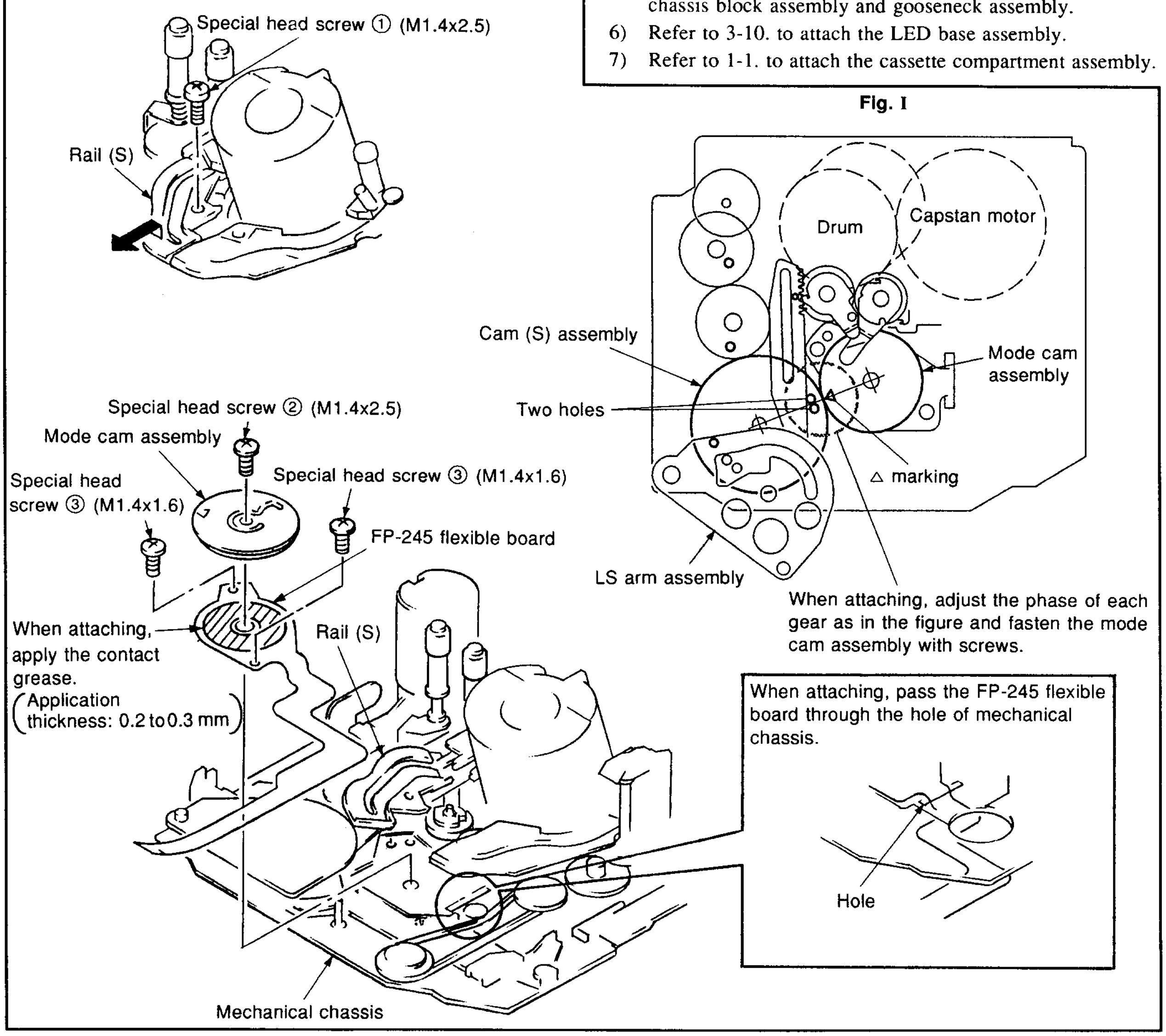
Note: Pay attention the FP-245 flexible board is connected to the mode selector II change connector board (Ref No. J-19).

2. Attaching

1) Attach the FP-245 flexible board with two of screw ③ and apply the contact grease to a pattern.
   Fixing torque: 0.0981 N•m (1 kg•cm)
   Thickness application of grease: 0.2 to 0.3 mm (A little overflow is no problem.)
2) Put the mode cam assembly on the fitting shaft. (Do not fasten with a screw.)
3) Attach the rail (S) with a screw ① and load by using the mode selector II as in the figure I. (Condition: the phase of each gear is matched. $\boxed{\text{S. OFF}}$ mode.)
   Fixing torque: 0.0588 N•m (0.6 kg•cm)
4) Pay attention to the phase with the cam (S) assembly. Fix the mode cam assembly with a screw ②.
   Fixing torque: 0.0588 N•m (0.6 kg•cm)

Note: Connect the FP-245 flexible board and mode selector II change connector board.

5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw ① (M1.4x2.5)
Rail (S)
Cam (S) assembly
Two holes
Special head screw ② (M1.4x2.5)
Mode cam assembly
Special head screw ③ (M1.4x1.6)
Special head screw ③ (M1.4x1.6)
FP-245 flexible board
When attaching, apply the contact grease.
(Application thickness: 0.2 to 0.3 mm)
Rail (S)
Mechanical chassis
Fig. I
Drum
Capstan motor
Mode cam assembly
△ marking
LS arm assembly
When attaching, adjust the phase of each gear as in the figure and fasten the mode cam assembly with screws.
When attaching, pass the FP-245 flexible board through the hole of mechanical chassis.
Hole

3-26. LS ARM ASSEMBLY, EJ ARM AND CAM (S) ASSEMBLY

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-10. to remove the LED base assembly.
4) Refer to 3-22 to remove the gooseneck assembly and LS chassis block assembly.
5) Refer to 3-23. to remove the GL (S) block assembly.
6) Set the S. OFF mode, remove the screw ①, then remove the LS arm assembly.
7) Remove in the order of tension spring and screw ② from the side of LS chassis, then remove the EJ arm and cam (S) assembly.

2. Attaching

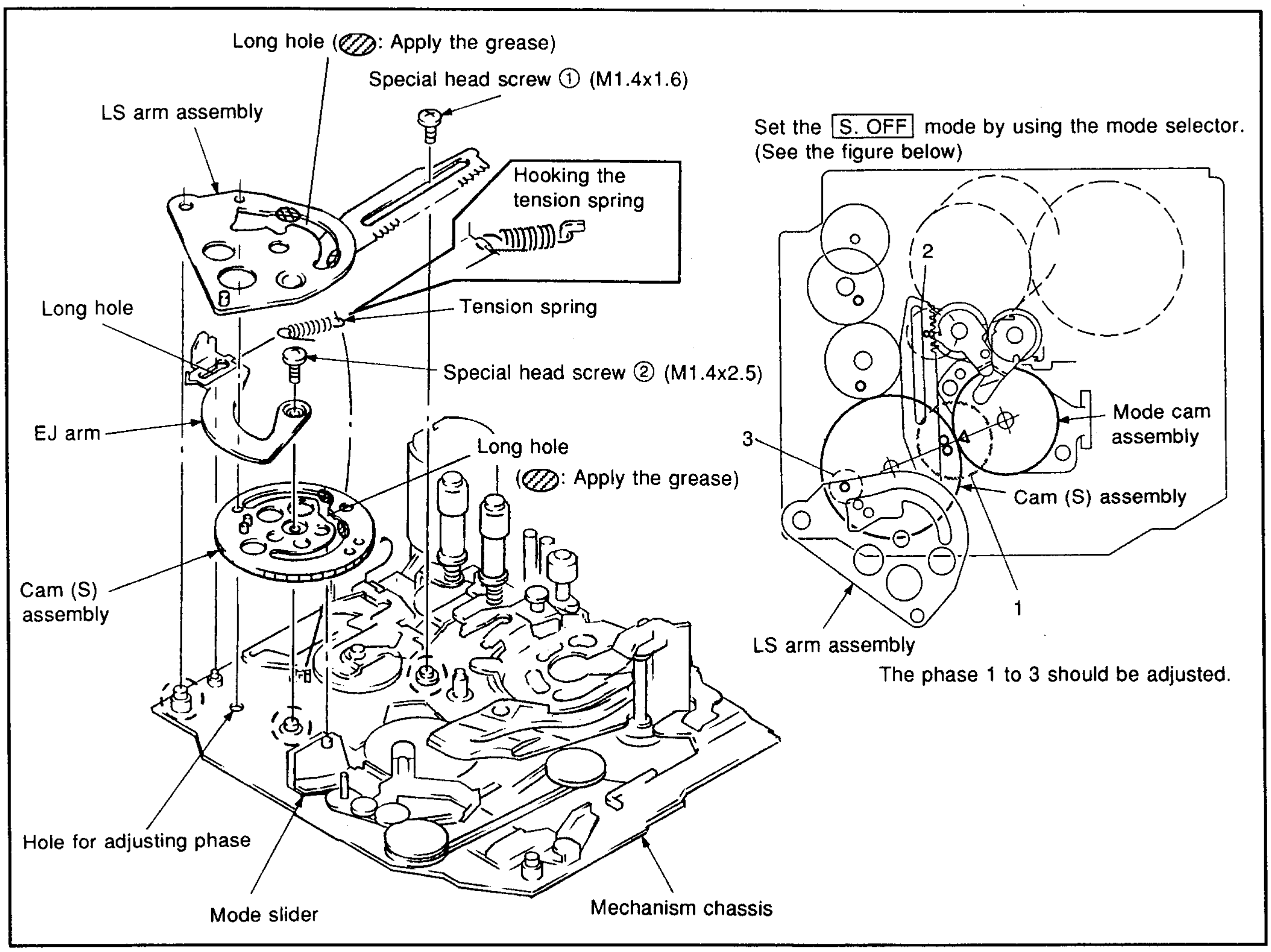
1) Check the S. OFF mode and apply the grease (three positions, 1.5 mm dia.) to the mechanical chassis.
   Grease: Floil Grease (SG-941)

Note: S. OFF mode is the condition that the phase of each gear is matched.

2) Apply the grease (◌: two positions, 1.5 mm dia.) into a long hole of the cam (S) assembly, attach it with attention to the phase.
   Grease: Floil Grease (SG-941)
3) Apply the grease (1.5 mm dia.) into a long hole of the EJ arm. Attach it with a screw ② and hook the tension spring.
   Fixing torque: 0.0981 N•m (1 kg•cm)

Note: There is a specified direction of the spring hook.

4) Apply the grease (two positions, 1.5 mm dia.) into a long hole of the LS arm assembly. Pay attention to the phase with the cam (S) assembly and mode slider, and attach with a screw ①.
   Fixing torque: 0.0981 N•m (1 kg•cm)
5) Refer to 3-23 to attach the GL (S) block assembly.
6) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
7) Refer to 3-10. to attach the LED base assembly.
8) Refer to 3-1. to attach the drum assembly.
9) Refer to 1-1. to attach the cassette compartment assembly.


Long hole (▨: Apply the grease)
Special head screw ① (M1.4x1.6)
LS arm assembly
Hooking the tension spring
Long hole
Tension spring
Special head screw ② (M1.4x2.5)
EJ arm
Long hole
(▨: Apply the grease)
Cam (S) assembly
Hole for adjusting phase
Mode slider
Mechanism chassis
Set the S. OFF mode by using the mode selector. (See the figure below)
2
3
Mode cam assembly
Cam (S) assembly
1
LS arm assembly
The phase 1 to 3 should be adjusted.

3-27. ADJUSTMENT ARM ASSEMBLY, RELAY BELT, RELAY PULLEY ASSEMBLY AND CONVERSION PULLEY ASSEMBLY

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and reform arm assembly.
4) Remove in the order of tension spring and a screw from the side of mechanical chassis, then remove the adjustment arm assembly.

Note: Remove the spring from the rear of mechanical chassis.

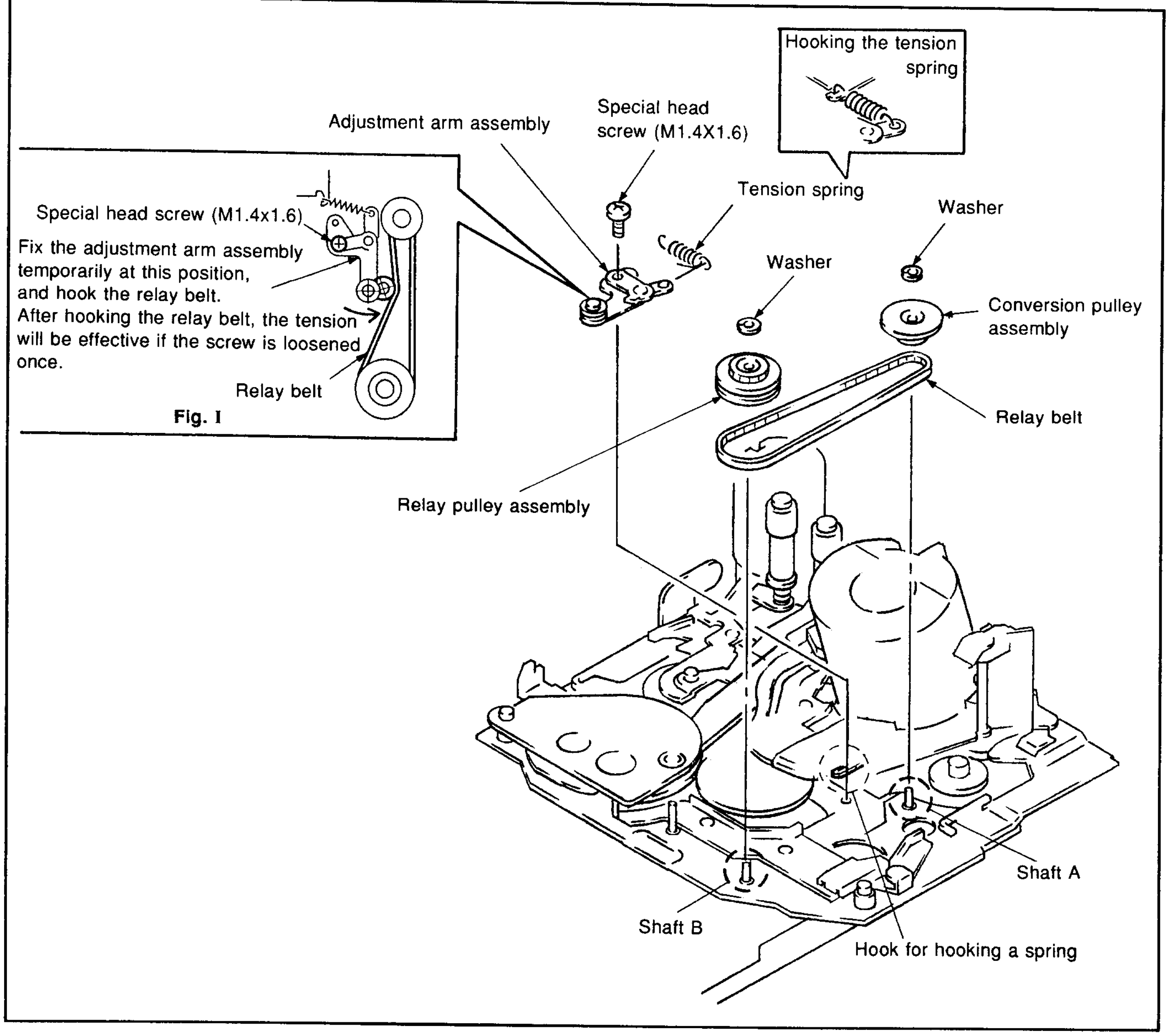
5) Remove the relay belt and washers, then remove the relay pulley assembly and conversion pulley assembly.

2. Attaching

1) Hook the tension spring to the side of LS chassis, then fix temporarily the adjustment arm assembly at the position in the figure I.

Note: There is a specified direction of the spring hook.

2) Apply one quarter drop oil to the shaft A and B each. (◌ part)
   Oil: NT68
3) Attach the relay pulley assembly and conversion pulley assembly with each washer, then hook the relay belt. (Pay attention to a torsion in a belt).
4) Loosen the screw, check a tension to the relay belt, and fasten the screw tightly. (Refer to the figure I.)
   Fixing torque: 0.0981 N • m (1 kg • cm)
5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the tension spring
Adjustment arm assembly
Special head screw (M1.4X1.6)
Tension spring
Washer
Washer
Conversion pulley assembly
Relay belt
Relay pulley assembly
Special head screw (M1.4x1.6)
Relay belt
Shaft A
Shaft B
Hook for hooking a spring

Fix the adjustment arm assembly temporarily at this position, and hook the relay belt.
After hooking the relay belt, the tension will be effective if the screw is loosened once.

Fig. I

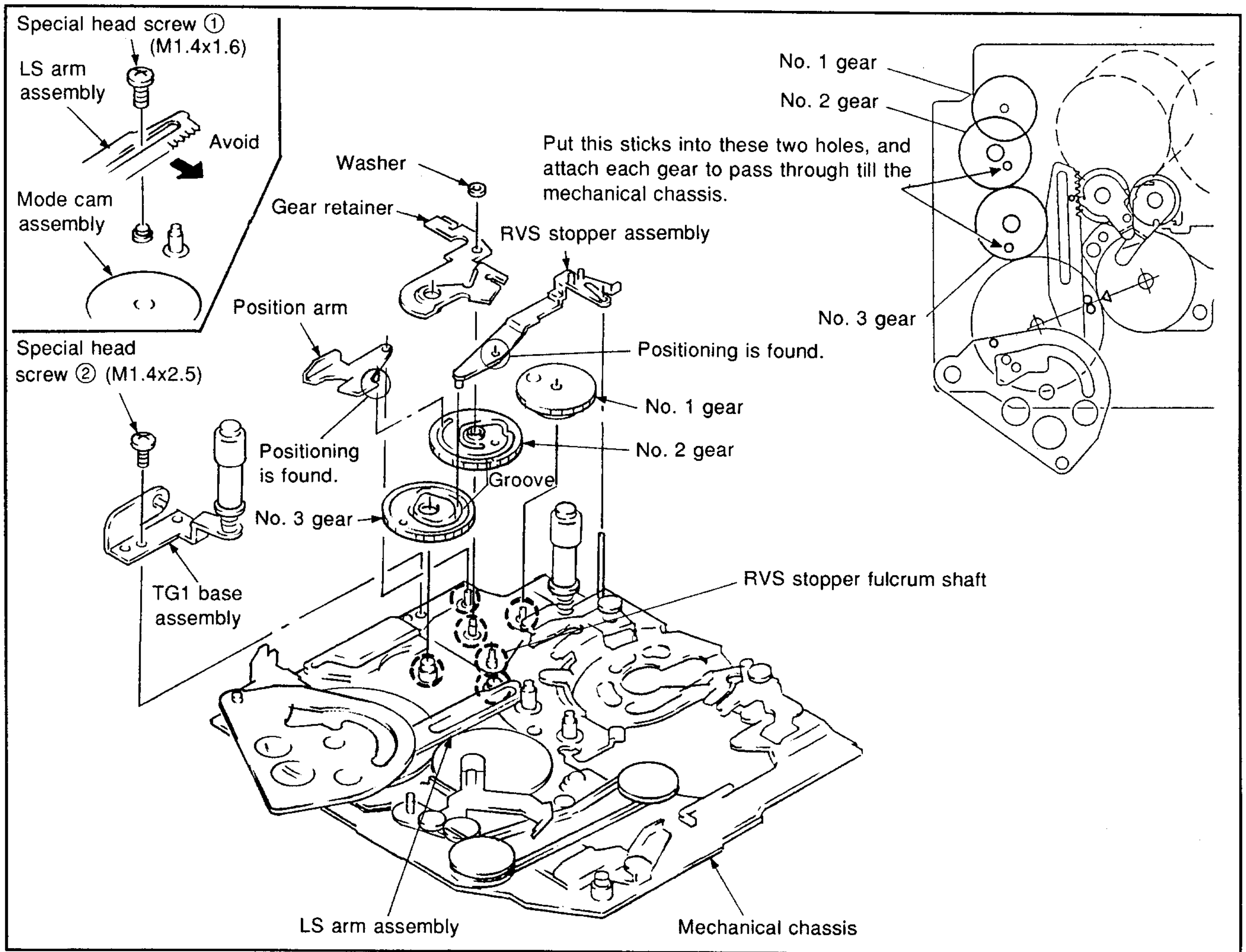
3-28. GEAR RETAINER, POSITION ARM, RVS STOPPER ASSEMBLY AND GEAR NO.1, 2 AND 3

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-2. to remove the HC assembly.
4) Refer to 3-10. to remove the LED base assembly.
5) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
6) Refer to 3-23. to remove the GL (S) block assembly.
7) Refer to 3-8. to remove the LM motor.
8) Remove the screw ① and keep away from the LS arm assembly.
9) Remove the washer and remove the gear retainer, position arm and RVS stopper assembly.
10) Remove the screw ② and remove the TG1 base assembly.
11) Remove each gear of No. 1, 2, and 3.

2. Attaching (Refer to "3-30. EACH GEAR PHASE ADJUSTMENT" for detail.)

1) Apply the grease (1.5 mm dia.) to six positions of ◌ part and each gear of No. 1, 2 and 3.
2) Attach in the order of No. 3, 2 and 1 with attention to the phase. (As for gear of No. 1, phase adjusting is not needed.)
3) Attach the TG1 base assembly with a screw ②.
4) Apply the grease to the groove of gears No. 2 and 3.
   Grease: Floil Grease (SG-941)
5) Attach in the order of RVS stopper assembly (The position adjustment is needed. RVS stopper fulcrum shaft), position arm (Adjust the pin and the groove of No. 2 gear.) and gear retainer with a washer.
6) Attach the LS arm assembly with a screw ①.
   Fixing torque: 0.0981 N • m (1 kg • cm)
7) Refer to 3-8. to attach the LM motor assembly.
8) Refer to 3-23. to attach the GL (S) block assembly.
9) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
10) Refer to 3-10. to attach the LED base assembly.
11) Refer to 3-2. to attach the HC assembly.
12) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw ①
(M1.4x1.6)
LS arm assembly
Avoid
Mode cam assembly
Special head screw ② (M1.4x2.5)
TG1 base assembly
Washer
Gear retainer
RVS stopper assembly
Position arm
Positioning is found.
Positioning is found.
No. 1 gear
No. 2 gear
Groove
No. 3 gear
RVS stopper fulcrum shaft
LS arm assembly
Mechanical chassis
No. 1 gear
No. 2 gear
Put this sticks into these two holes, and attach each gear to pass through till the mechanical chassis.
No. 3 gear

3-29. MODE SLIDER

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-10. to remove the LED base assembly.
4) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly, compulsion arm assembly and pinch release arm.
5) Refer to 3-23. and 3-24. to remove the each GL (S) and (T) block assembly.
6) Refer to 3-25. to remove the LS arm assembly, EJ arm and cam (S) assembly.
7) Loosen a screw, slide the adjustment arm assembly in the direction of arrow (fixed at the position in the figure I) Ⓐ, and remove the relay belt.
8) Remove the mode slider in the direction of arrow. (Pay attention to lose a of LS roller.)

2. Attaching

1) Apply the grease (1.5 mm dia.) to the shaft A and attach the mode slider in the direction of arrow.
   Grease: Floil Grease (SG-941)
2) Apply the grease (1.5 mm dia.) to each shaft B and C, and attach the LS roller to the shaft B.
   Grease: Floil Grease (SG-941)
3) After the relay belt is attached, loosen the screw, check a tension to the relay belt, and fasten the screw tightly. (Refer to the figure I.)
   Fixing torque: 0.0981 N • m (1 kg • cm)
4) Adjust the phase of each gear of No. 2 and 3 and the mode cam assembly by using the mode selector II. (Refer to 3-30.)

Note: The mode cam assembly should be manual operated.

5) Refer to 3-26. to attach the cam (S) assembly, EJ arm and LS arm assembly.
6) Refer to 3-23. and 3-24. to attach the GL (S) and (T) block assembly.
7) Refer to 3-22. to attach the release arm, compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
8) Refer to 3-10. to attach the LED base assembly.
9) Refer to 3-1. to attach the drum assembly.
10) Refer to 1-1. to attach the cassette compartment assembly.

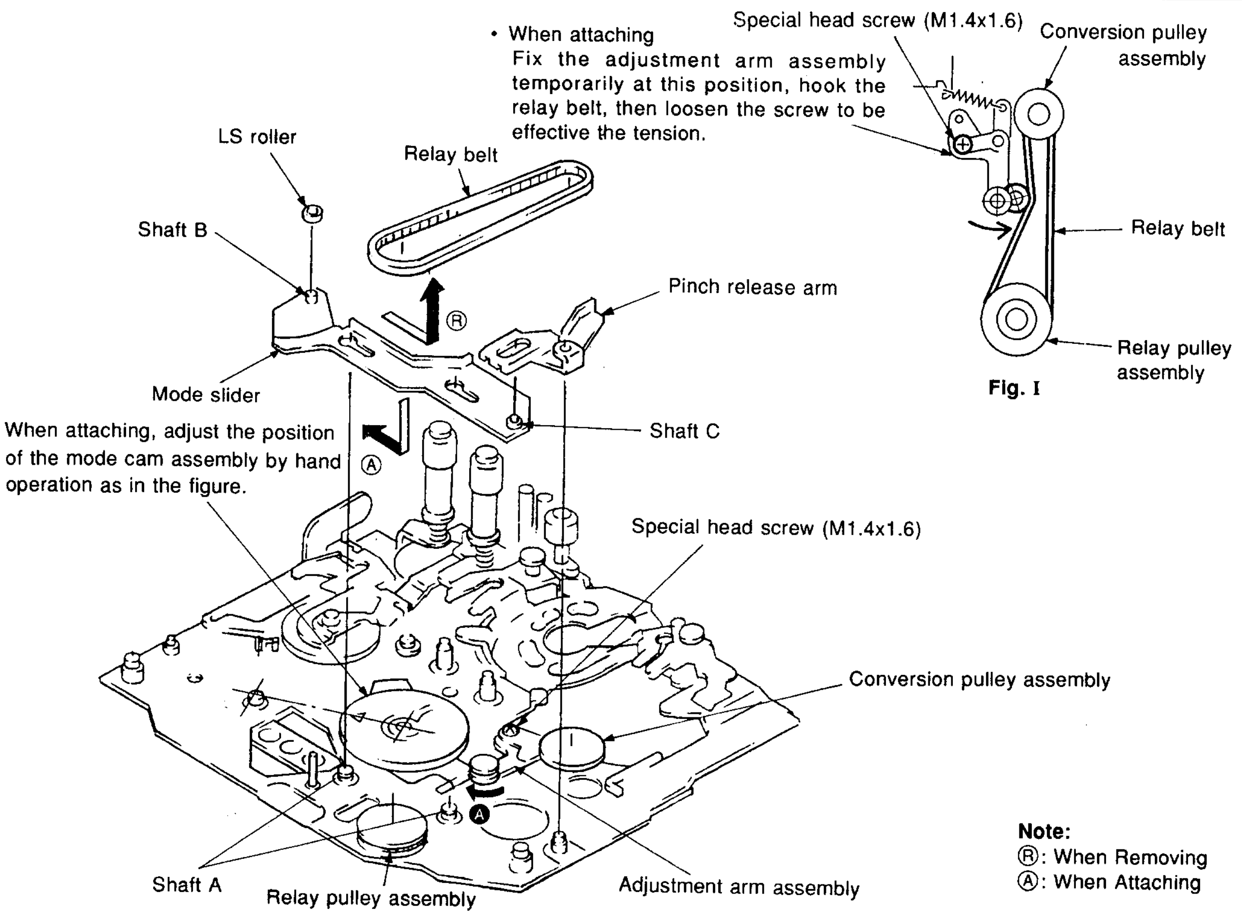

• When attaching
Fix the adjustment arm assembly temporarily at this position, hook the relay belt, then loosen the screw to be effective the tension.
Special head screw (M1.4x1.6)
Conversion pulley assembly
LS roller
Relay belt
Shaft B
Ⓡ
Pinch release arm
Relay belt
Relay pulley assembly
Mode slider
When attaching, adjust the position of the mode cam assembly by hand operation as in the figure.
Ⓐ
Shaft C
Special head screw (M1.4x1.6)
Conversion pulley assembly
Ⓐ
Shaft A
Relay pulley assembly
Adjustment arm assembly

Fig. I

Note:
Ⓡ: When Removing
Ⓐ: When Attaching

3-30. EACH GEAR AND MODE CAM ASSEMBLY PHASE ADJUSTMENT

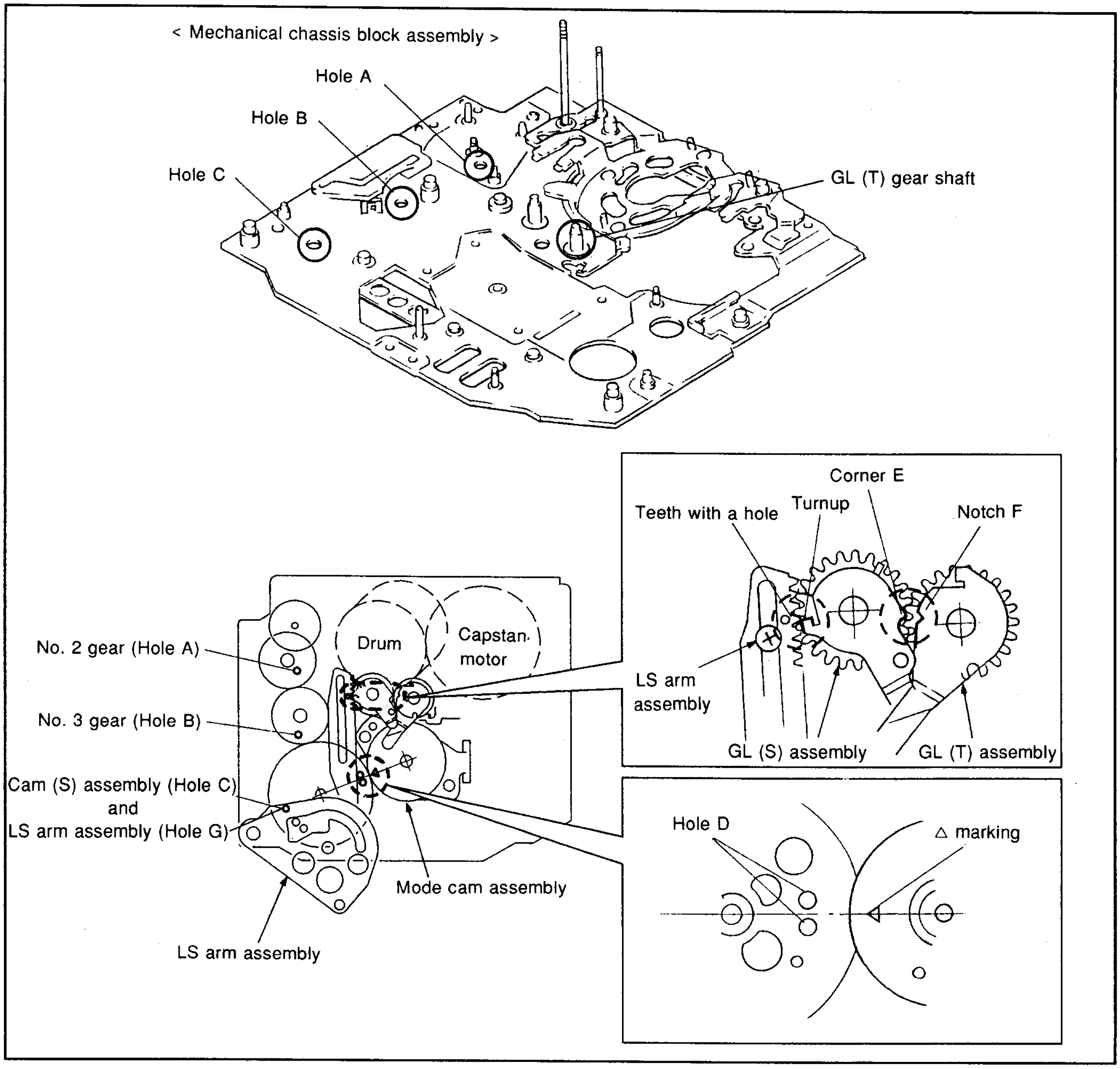
In case the phase of mode cam assembly and its related gears does not match, so that the normal operation is not performed due to replacement or removal of parts needed to adjust the phase, adjust the phase of each parts as below.

- **Phase adjusting**

1) Set each hole A of gear No. 2, B of gear No. 3 and C of cam (S) assembly to the holes A, B and C on the mechanical chassis in layers.
2) Set the position of the △ mark on the mode cam assembly between two of holes D on the cam (S) assembly.
3) Attach the GL (T) assembly to the GL (T) gear shaft.
4) Set the position of the notch F and the corner E on the GL (S) assembly to the GL (T) assembly.
5) Set the hole G on the LS arm assembly to the hole C on the cam (S) assembly in layers. Also set the position of the teeth with a hole of the LS arm assembly and the turn-up of the GL (S) assembly at the same time.
6) After adjusting all phase, check the S. OFF mode by using the mode selector II (Ref No. J-18).

Note 1: The S. OFF mode is the condition that all phase are matched.

Note 2: As for attaching each gear and mode cam assembly, refer to attaching for each.



< Mechanical chassis block assembly >
Hole A
Hole B
Hole C
GL (T) gear shaft
Corner E
Teeth with a hole
Turnup
Notch F
LS arm assembly
GL (S) assembly
GL (T) assembly
Drum
Capstan motor
No. 2 gear (Hole A)
No. 3 gear (Hole B)
Cam (S) assembly (Hole C) and LS arm assembly (Hole G)
Mode cam assembly
LS arm assembly
Hole D
△ marking

4. TAPE PATH ADJUSTMENT

4-1. PREPARATION FOR ADJUSTMENT

1) Refer to 2-2. to clean the tape running surface (tape guide, drum, capstan and pinch roller).
2) Connect the adjustment remote commander (Ref No. J-17) to the remote terminal of the set and turn the HOLD switch on.
3) Select the data of page: 3 and address: 3C , then set data: 07. (Note 1)
4) Connect the oscilloscope (Note 2). (Note 1)
   Channel 1—RS-63/64 board CN775 ① pin (Note 3)
   External trigger—RS-63/64 board CN775 ⑥ pin
   Trigger scope— +

Note 1: Refer to each service manual due to difference between each model. The case of DCR-VX700/VX1000 series is mentioned here.

Note 2: Connect the oscilloscope through the multi CP jig 2 (J-6082-140-A) or CPC jig (J-6082-311-A).

Note 3: Connect CN775 ① and ② pin (GND) at 75Ω resistance.

5) Playback a tracking tape (XH2-1) (Ref No. J-5).
6) Check that the RF waveform is flat at the entrance and exit of the oscilloscope. (See the figure I-Ⓐ) If the RF waveform is not flat at the entrance and exit (See the figure I-Ⓑ, Ⓒ) , adjust according to the adjustment from 4-2.
7) After adjusting and check satisfied with step 6), reset the data which was set in step 3) by using the adjustment remote commander. (Note 1)
   1. Select the data of page: 3 and address: 3C, then set the data: 00.
   2. Remove the power supply.

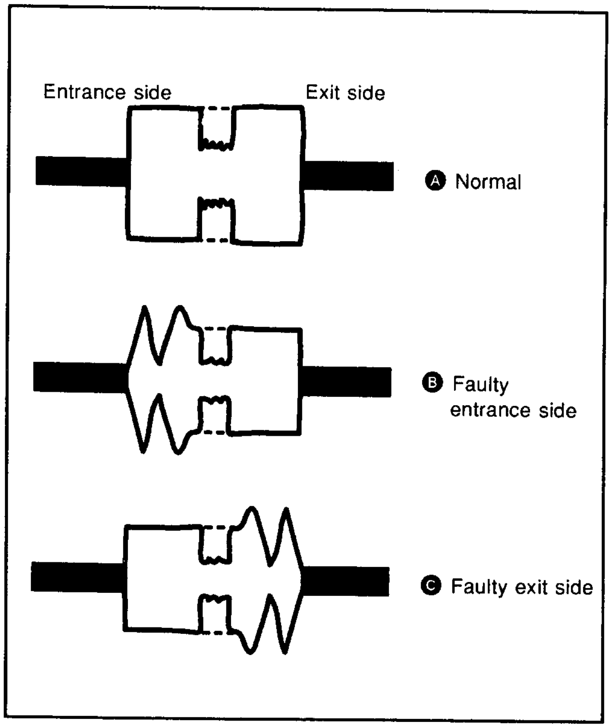
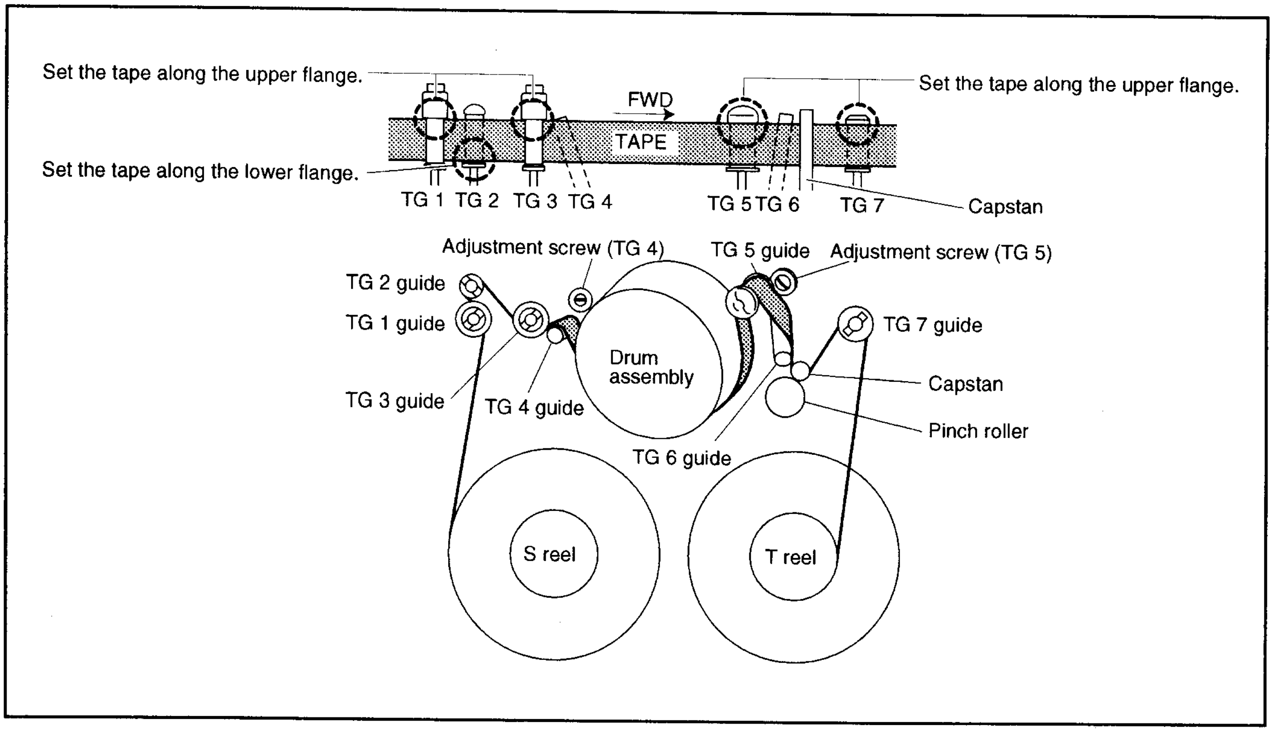

Entrance side
Exit side
Ⓐ Normal
Ⓑ Faulty entrance side
Ⓒ Faulty exit side

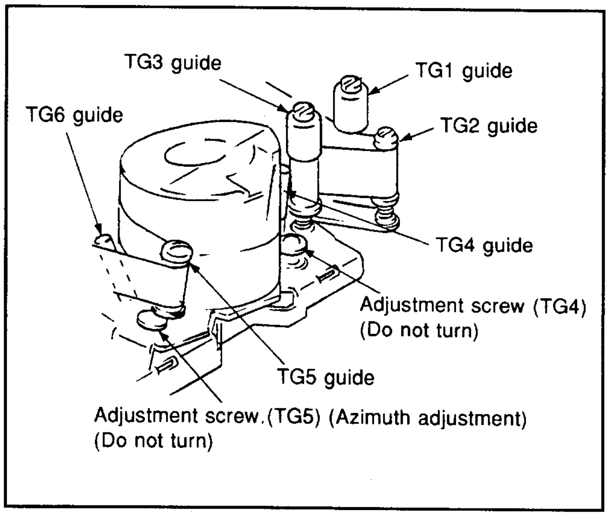
Fig. I

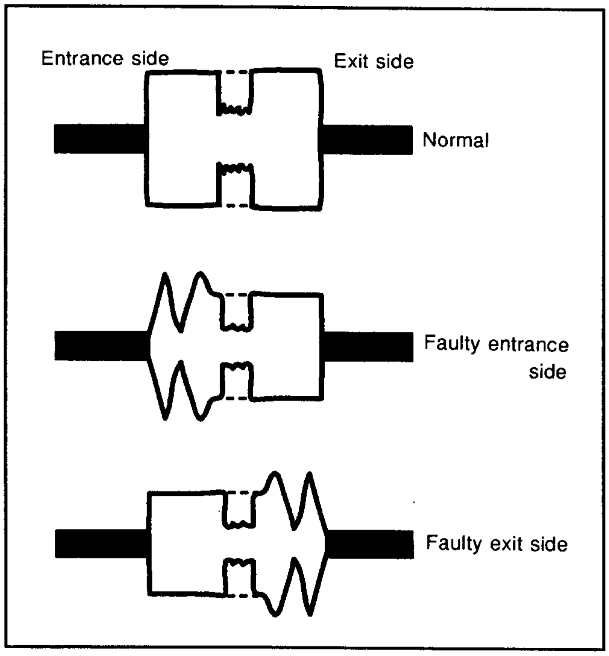

Set the tape along the upper flange.
Set the tape along the lower flange.
FWD
TAPE
TG 1
TG 2
TG 3
TG 4
TG 5
TG 6
TG 7
Set the tape along the upper flange.
Capstan
Adjustment screw (TG 4)
TG 5 guide
Adjustment screw (TG 5)
TG 2 guide
TG 1 guide
TG 7 guide
Drum assembly
Capstan
TG 3 guide
TG 4 guide
Pinch roller
TG 6 guide
S reel
T reel

4-2. TRACKING ADJUSTMENT

1) Playback the tracking tape (XH2-1) (Ref No. J-5).
2) Turn the TG3 guide so that the waveform is flat at the entrance.
3) Turn the TG5 guide so that the waveform is flat at the exit.

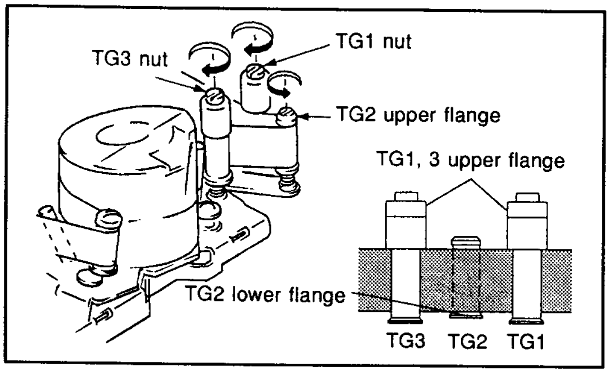
Note: Do not loosen the gate adjusting screw of TG4 and TG5.


TG3 guide
TG1 guide
TG6 guide
TG2 guide
TG4 guide
Adjustment screw (TG4)
(Do not turn)
TG5 guide
Adjustment screw.(TG5) (Azimuth adjustment)
(Do not turn)


Entrance side
Exit side
Normal
Faulty entrance side
Faulty exit side

4-3. TG1, TG2 AND TG3 GUIDE ADJUSTMENT

1) Playback the tracking tape (XH2-1) (Ref No. J-5).
2) Be sure the tape is parallel with the upper flange of TG1 and TG3 during FWD running, and check the tape is parallel with the lower flange of TG2 as well. In case there is a space between each flange and the tape, rotate the TG3 nut clockwise to be parallel with each flange as for TG1 and TG3, rotate the upper flange counterclockwise to be parallel with the lower flange as for TG2.


TG3 nut
TG1 nut
TG2 upper flange
TG1, 3 upper flange
TG2 lower flange
TG3
TG2
TG1

Confirm no change of the tracking waveform. If the tracking waveform at the entrance describes a downward curve as shown in the figure II, raise the height of TG2 lower flange to adjust the tracking at the entrance.

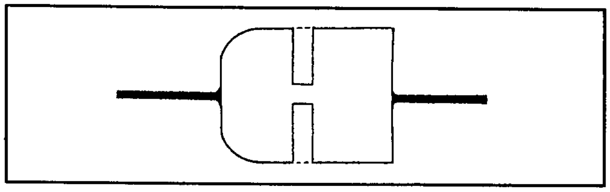
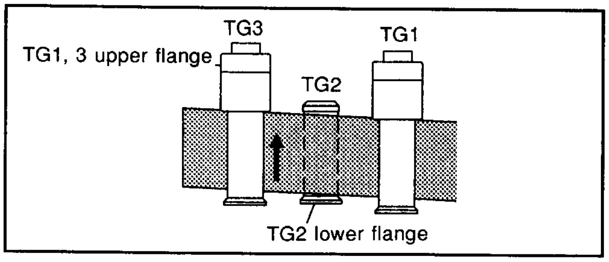


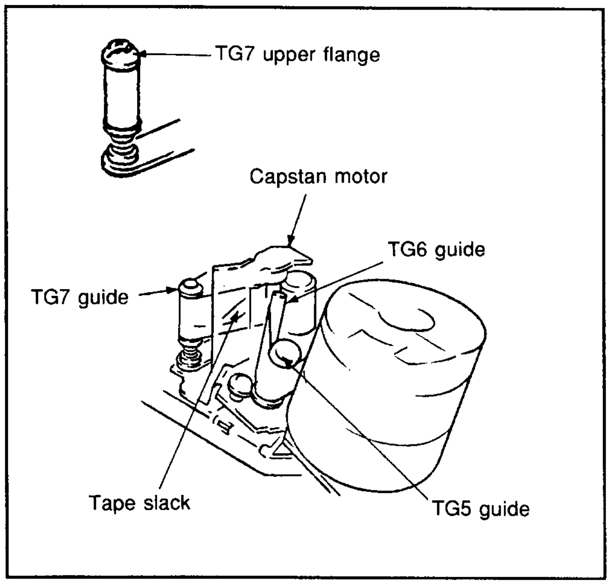
Fig. II

After adjusting the tracking at the entrance, set the RVS mode. If the tape is curled at the lower flange of TG2 guide, rotate the TG2 upper flange clockwise to correct the curl. Rotate the TG3 nut in a 180-degree arc counterclockwise, and check raising tape.


TG1, 3 upper flange
TG3
TG1
TG2
TG2 lower flange

4-4. TG7 GUIDE ADJUSTMENT

1) In the playback mode, check that the tape is not slack between the capstan and TG7 guide.
   Specification: 0.5 mm or less
   If the tape is slack, rotate the TG7 guide and adjust to correct the slack.
2) Set the REV and check the RF waveform at the exit. (See Fig. III)
3) If the waveform is unsatisfactory,rotate the TG7 upper flange in a 90-degree arc counterclockwise and check the step 1) and 2) again.
4) Apply the screw lock (Ref No. J-20) to the part of screw on TG7 guide.


TG7 upper flange
Capstan motor
TG6 guide
TG7 guide
Tape slack
TG5 guide

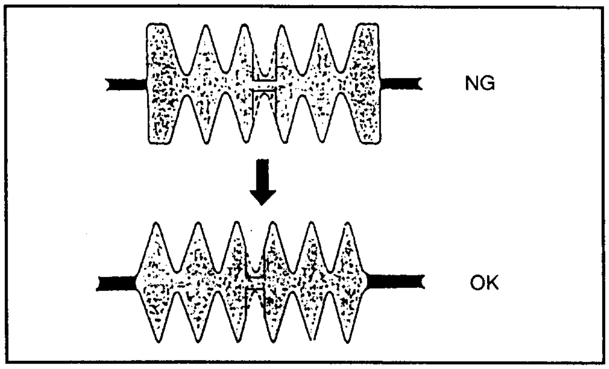


Fig. III

4-5. CHECKS AFTER ADJUSTMENTS

1. Tracking check

1) Playback the tracking tape (XH2-1) (Ref No.J-5). (See Fig. IV)
2) When the waveform's amplitude of CUE (or REV) is (A= 100%), check the amplitude of RF waveform becomes approx. 0.65A (65%) during playback.

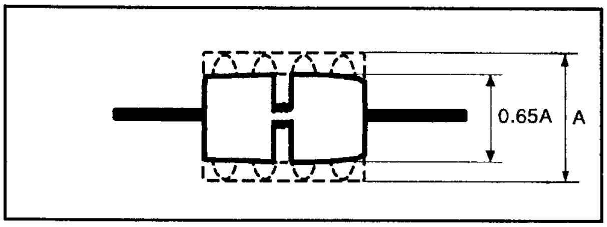
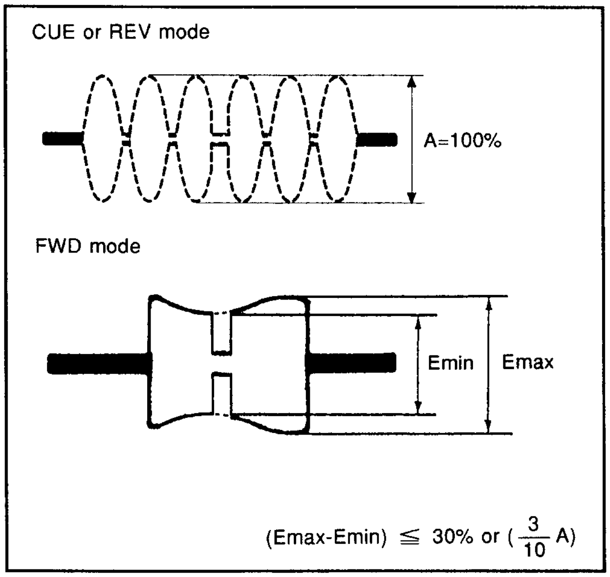


Fig. IV

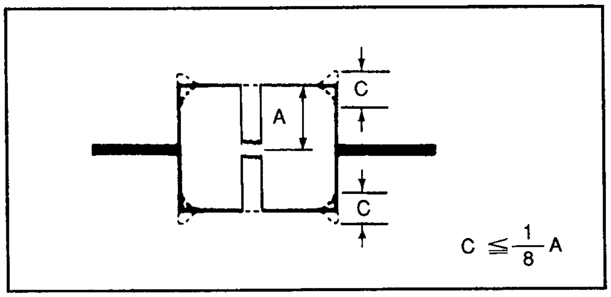
3) When the waveform's amplitude of CUE (or REV) is (A= 100%), check the difference between the minimum amplitude (Emin) and the maximum amplitude (Emax) for FWD is 30% or less. (See Fig. V)


CUE or REV mode
A=100%
FWD mode
Emin
Emax

$(\mathrm{Emax}-\mathrm{Emin}) \leqq 30\%$ or $(\frac{3}{10}\mathrm{A})$

Fig. V

4) Check the waveform does not fluctuate badly. (See Fig. VI)



$\mathrm{C} \leqq \frac{1}{8}\mathrm{A}$

Fig. VI

2. CUE AND REV CHECKS

1) Playback the tracking tape (XH2-1) (Ref No. J-5) and set the REV. The peak pitches of the waveform at this time must be uniform. (See Fig. VII)
   If not uniform, carry out "4-2. TRACKING ADJUSTMENT" and "4-4. TG7 GUIDE ADJUSTMENT".
2) Set the CUE. The peak pitches of the waveform at this time must be uniform. (See Fig. VII)
   If not uniform, carry out "4-2. TRACKING ADJUSTMENT".

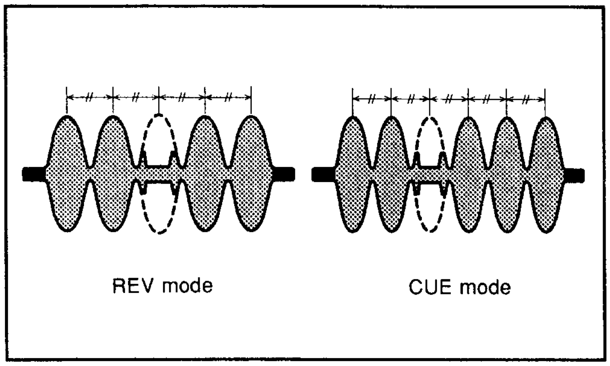
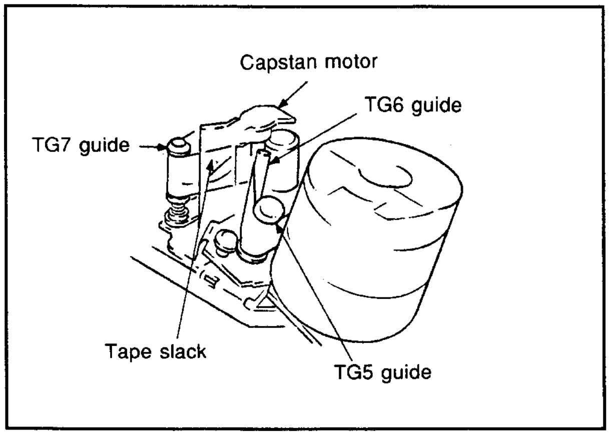

REV mode
CUE mode

Fig. VII

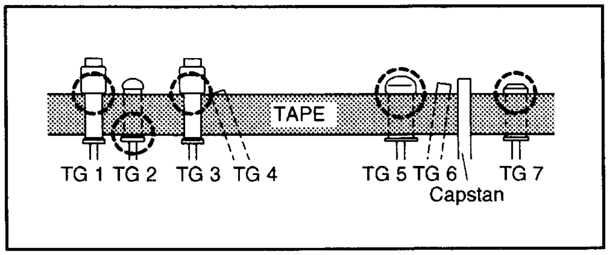
3. RISING CHECK

1) Playback the tracking tape (XH2-1) (Ref No. J-5).
2) Set the PLAYBACK mode, and check the RF waveform rises horizontally within one second. Also check the tape around the pinch roller is not slack.
3) Playback the tape after CUE/REV and FF/REW, and check the RF waveform rises horizontally within one second.
4) Repeat the checks at steps 2) and 3).

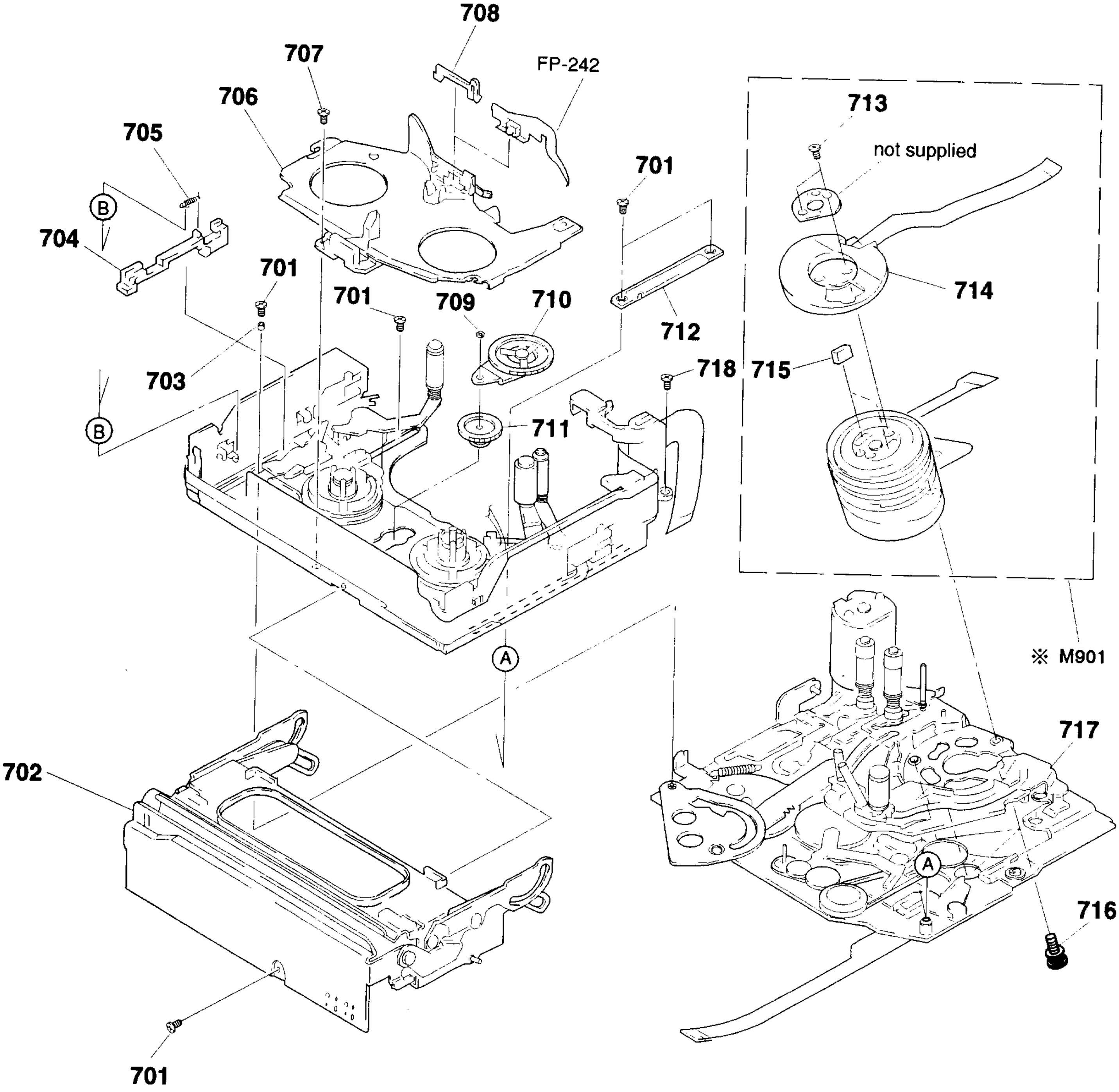

Capstan motor
TG6 guide
TG7 guide
Tape slack
TG5 guide

4. TAPE PATH CHECK

Check that the tape is not curled badly on each TG1 upper flange, TG2 lower flange, TG3 upper flange, TG5 upper flange and TG7 upper flange in the setting of CUE and REV.

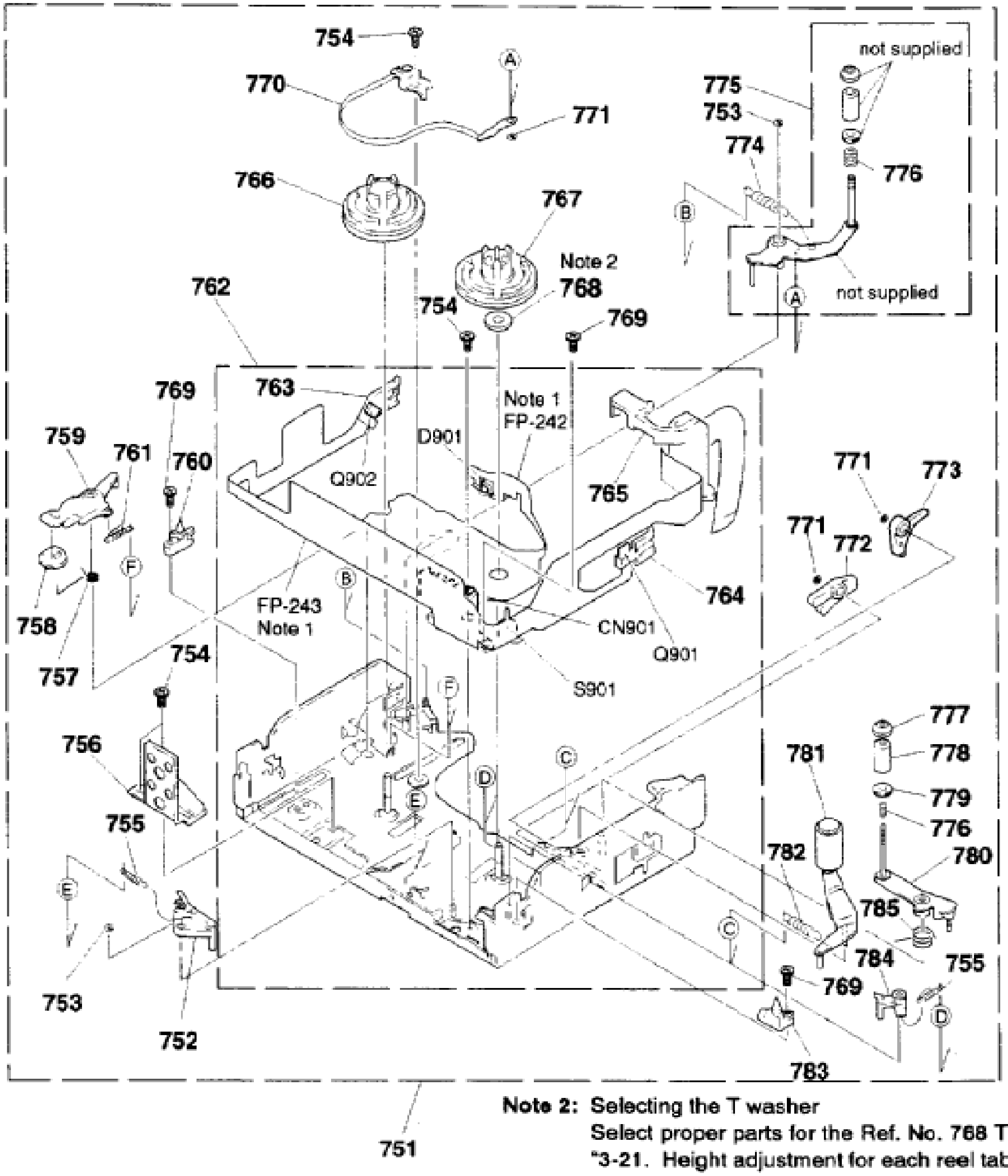

TAPE
TG 1
TG 2
TG 3
TG 4
TG 5
TG 6
TG 7
Capstan

CASSETTE COMPARTMENT AND DRUM ASSEMBLIES


708
707
FP-242
706
705
704
B
701
701
701
709
710
712
703
B
718
711
A
702
701
713
not supplied
714
715
※ M901
717
A
716

LS CHASSIS ASSEMBLY

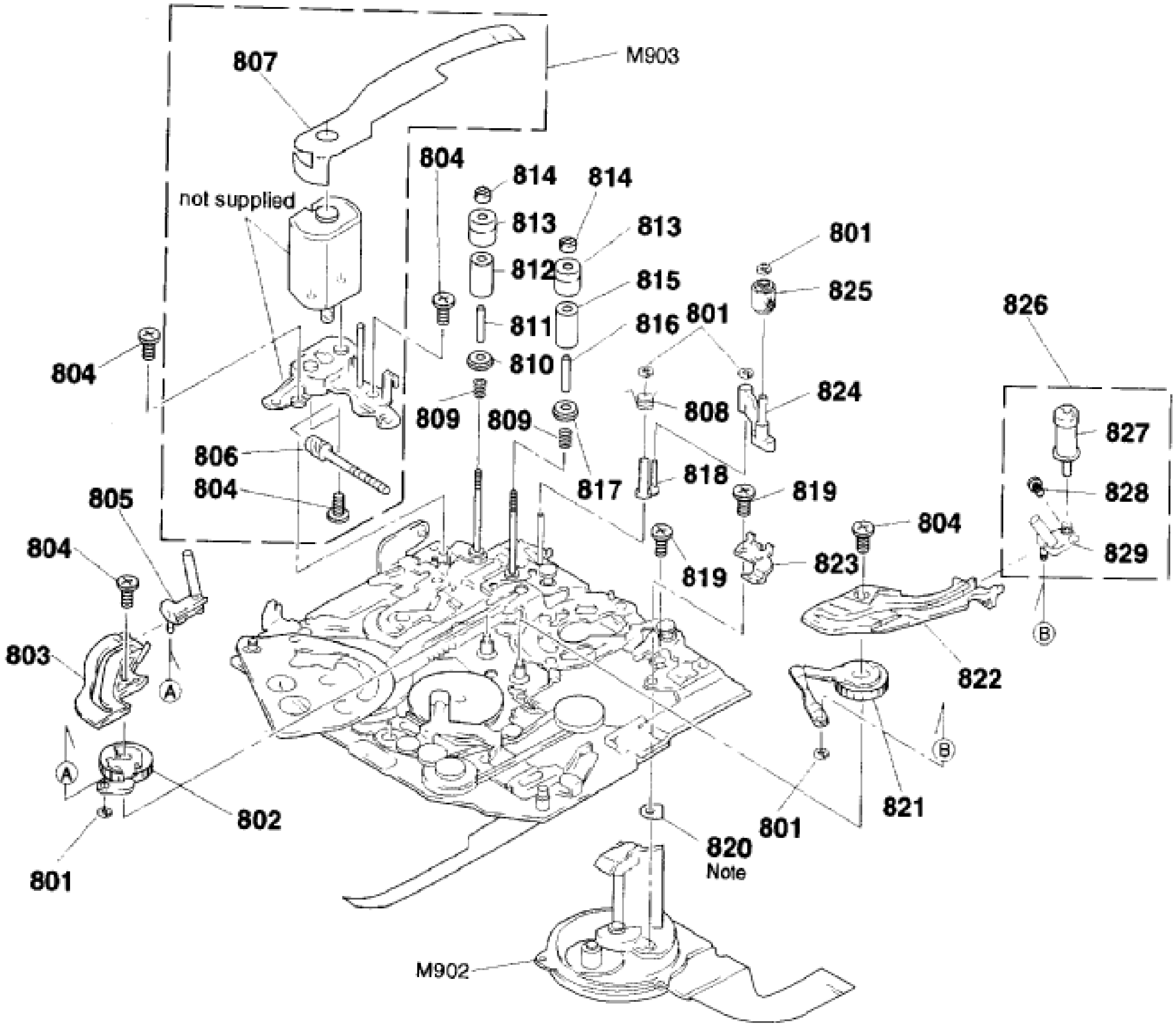
Note 1: About FP-242 and FP-243
The FP-242 and FP-243 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 LS chassis (S) assembly. They are not supplied separately because the high precision for installation is needed.


754
770
A
771
775
753
774
not supplied
776
766
767
B
Note 2
768
not supplied
762
754
769
A
769
763
Note 1
FP-242
D901
759
761
760
Q902
765
771
773
771
772
B
F
FP-243
Note 1
764
CN901
758
Q901
757
754
F
S901
756
C
D
777
778
781
E
779
755
776
782
780
E
785
C
784
755
753
769
D
752
783
751

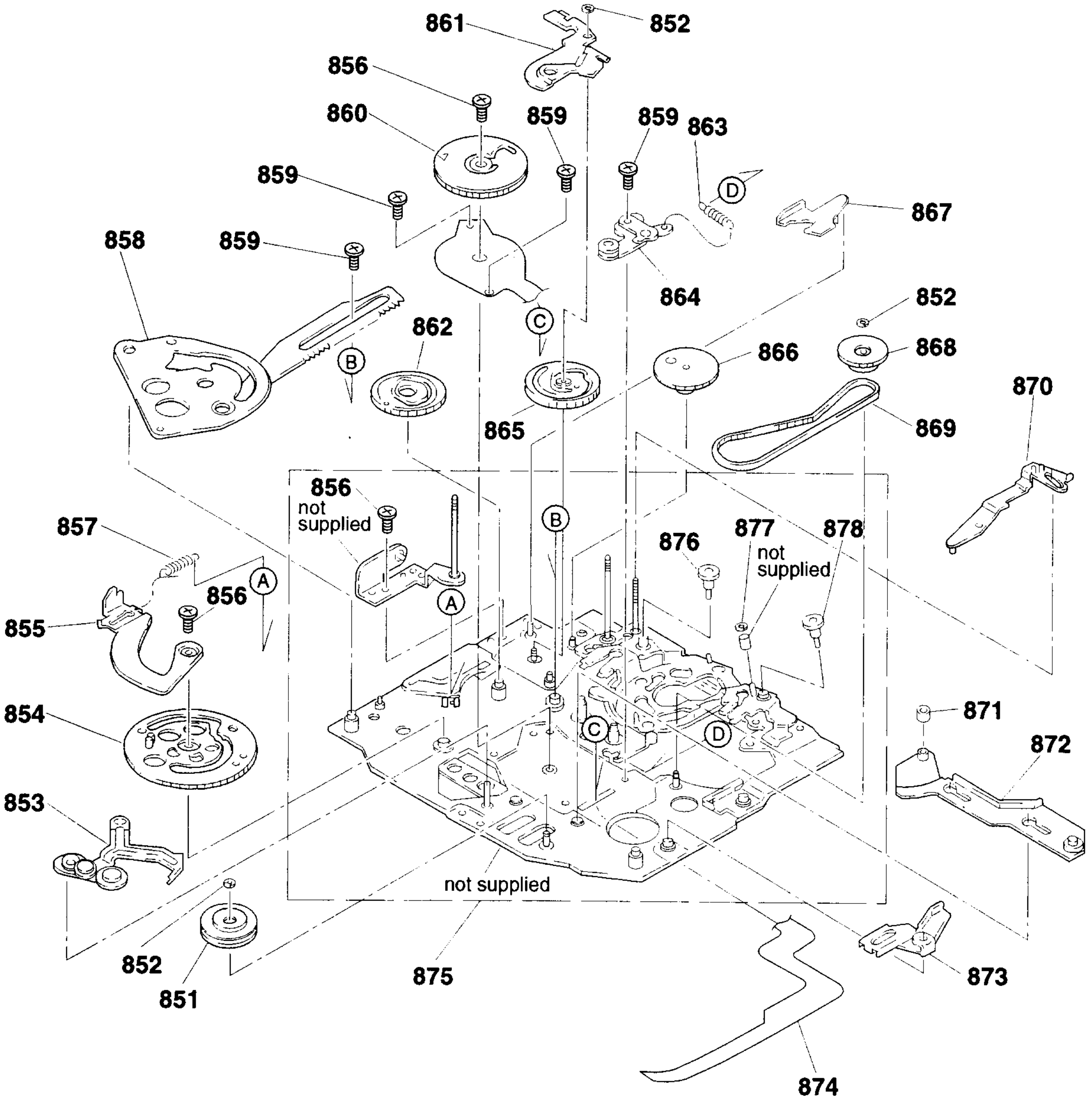
Note 2: Selecting the T washer
Select proper parts for the Ref. No. 768 T washer according to "3-21. Height adjustment for each reel table" on page 23.

MECHANISM CHASSIS ASSEMBLY (1)

Note: Be sure to remember the installed position (one of two positions), direction and thickness of the Ref. No. 820 (head spacer) when the M902 (capstan motor) is removed. Refer to "3-9. Capstan motor" on page 15 for details. The thickness of head spacer is normally 100 µm. If it is lost, two 50 µm head spacers will be needed. Be careful not to loose it.


807
M903
not supplied
804
814
814
813
813
812
815
811
816
801
810
809
809
817
801
825
808
824
818
819
819
823
804
826
827
828
829
B
822
804
806
804
805
804
803
A
A
802
801
821
B
801
820
Note
M902

MECHANISM CHASSIS ASSEMBLY (2)


861
852
856
860
859
859
859
863
D
867
858
859
864
C
852
B
862
866
868
865
869
870
856
not supplied
B
857
876
877
not supplied
878
A
856
A
855
854
C
D
871
872
853
not supplied
852
875
873
851
874